THE
Paſchal Solemnity
RECTIFIED:
OR, THE
PERPETUAL TABLE
For finding
EASTER
IN THE
Book of *Common-Prayer*
Newly Corrected.

Whereby *Eaſter*-Day, and the reſt of the *Moveable Feaſts* in the CHURCH of *ENGLAND*, may be truly found agreeable to the Inſtitution of the CHURCH, as expreſs'd in her *Rubricks* relating thereto, according to the *Julian* Method of Computation of Time.

Wherein is ſhewn, among divers other Things, the Reaſon of the Difference of the *Julian* and *Gregorian* Calendar at this Time: Alſo the true Cauſe of the frequent Contradictions that are found between the TABLE and the RULE in the Book of COMMON-PRAYER, with regard to EASTER: With all the Variations thereof fully accounted for.

All which is humbly Propoſed to the Conſideration of the LEGISLATIVE POWER of this KINGDOM.

By *WILLIAM JACKLING*, Philomath.

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A PREFATORY
DISCOURSE
Concerning the Eccleſiaſtical
Full Moons.

I Had not troubled the Reader with a Preface to this Diſcourſe, had I not, ſince the writing hereof, met with ſome Paſſages in Dr. *Prideaux*'s Connection of the Hiſtory of the Old and New Teſtament, vol. 2. 8*vo*. which ſeemingly render what I have here advanced, with regard to the Correction of the Perpetual Table, in ſome degree, unneceſſary. For I perceive from him, that the Cyclian Computatiſts have made a Diſtinction between the real Full Moon in the Heavens, and the Full Moon mentioned in the Rule; for beſides the natural Full Moon Day, there is, they ſay (or rather they have made) an *Eccleſiaſtical* Full Moon Day, and then tell us, it is of the Eccleſiaſtical Full Moon, and not of the natural that the Rule is to be underſtood.

But

But it is reaſonable to believe, that in this Affair, Neceſſity has been the Mother of Invention; for when they found their Cycle would not bring about the real New and Full Moons at the ſame Point of Time in the *Julian* Year, as was expected they would, in all ſucceeding Cycles, they have, inſtead of correcting this Defect, accommodated the Rule which was deſign'd by the Church to be a ſtanding and invariable Rule to the Defect of their Cycle, and make it to ſpeak what the Authors of it never intended. For it was the natural Full Moon which the *Nicene* Fathers intended and decreed ſhould govern *Eaſter*; and I believe that it never was decreed at any Time ſince, that this Canon of the *Nicene* Fathers ſhould be underſtood in a Senſe different from what thoſe Fathers intended it ſhould be underſtood. For Inſtance, was it ever ratified or decreed by the Church to this or the like Effect? to wit, That how far ſoever the widing Defect of the Cyclian Tables ſhall carry us from the Time of the real Paſchal Full Moon, there ſhall the *Eccleſiaſtical* Paſchal Full Moon be ſuppoſed to be, and the Rule in our *Engliſh* Common-Prayer Book, which heretofore was a ſtanding Rule, ſhall from henceforward be underſtood as variable, and *be altogether accommodated* to the Defect of the Cyclian Tables. If this, or any ſuch thing has been done, I have done; for I readily agree, ſince this Feſtival, and the Time of obſerving it, is not of divine Inſtitution, it cannot be wrong obſerved, if it be but obſerved where the Church placeth it. But I am afraid, nay, I had almoſt ſaid, I am ſure, that not any thing like this has been done; but rather, that thoſe fictitious eccleſiaſtical Full Moons have been introduced into the Church, even as ſilently as the Error of the Cycle itſelf.

Yet they ſay, that the *Eccleſiaſtical* New Moon Day is that which *by the Eccleſiaſtical* Conſtitutions is appointed for it, and the fourteenth Day after is the *Eccleſiaſtical* Full Moon Day, and the Primes, that is, the Figures of the golden Num-Numbers in the firſt Collumn of every Month in the Calendar are there placed to point out both; and they further ſay, that this Order was firſt appointed by the Council of *Nice*, and that the Church, abiding by the old Order, ſtill obſerves *Eaſter* according to the Reckoning of the *Eccleſiaſtical* Moon, and not according to that of the natural. (See Dr. *Prideaux.) Preface to the above cited vol.*

What they here call the *Eccleſiaſtical Conſtitutions*, I confeſs I am in ſome doubt about: They cannot ſure mean the *Nicene* Canon with regard to *Eaſter*; for by their own Confeſſion, the Time on which their *Eccleſiaſtical* New and Full Moons happened, about the Time of the *Nicene* Council, were coincident with the natural or real New and Full Moons; and they alſo confeſs, that the Defect of *Meton*'s nineteen Years Cycle was unknown to the *Nicene* Fathers; therefore it cannot be ſuppoſed that the *Nicene* Canon was ever intended by thoſe Fathers to be accommodated to a Defect which they knew nothing of. Wherefore, theſe *Eccleſiaſtical* Conſtitutions which they ſpeak of, and by which the *Eccleſiaſtical* New Moon Day is appointed, cannot poſſibly refer to the *Nicene* Canon.

Indeed, they ſay, that the Figures in the Golden Numbers in the firſt Column of the Calendar, are there placed to point out the *Eccleſiaſtical* New and Full Moon Day, and that this Order was firſt appointed at the Council of *Nice*, when the real New and Full Moons were as they are there placed.

This, I preſume, is what they muſt mean by the *Eccleſiaſtical* Conſtitutions. But what of this?

What if the Figures of the Golden Numbers are placed in the Calendar as the real New and Full Moons were at the Time of the *Nicene* Council, and ſuppoſing them thus placed by the Appointment of that Council, which I queſtion; but however, I ſay, ſuppoſing this, yet notwithſtanding, ſince the Difference which we now find between the natural New and Full Moon, and what they call the *Eccleſiaſtical*, is occaſioned by the Defect of the nineteen Years Cycle, and ſince this Defect was not known (as is confeſſed on all Hands) to that Council, therefore, tho' they might appoint, that the real New and Full Moons, as they then happened, and as we find the Figures of the Golden Numbers placed in the Calendar, perhaps afterwards by the Appointment of ſome of the Biſhops of *Alexandria*; I ſay, tho' the *Nicene* Council might appoint, that the real New and Full Moons as they then were ſhould govern *Eaſter*, yet it was upon Suppoſition that the Cycle (if they made uſe of any) would have brought them all over again in all ſucceeding Cycles at the ſame Point of Time in the *Julian* Year as they then were, but the Cycle has fail'd in this Reſpect; wherefore, unleſs they had decreed that the Cycle ſhould be followed, whether it did, or did not, bring about the New and Full Moons as they then were, how can it be ſaid, that the *Nicene* Council ever conſtituted or appointed this Cycle to point out the Paſchal New and Full Moon. And,

As to what they ſay concerning the Church's abiding ſtill by its old Order, this muſt refer to what was appointed at the Council of *Nice*; but ſince I have proved, that what was appointed by that Council, with regard to *Eaſter*, was meant of the natural Full Moon, and this Order is the ſame in effect with our Rule in the Book of Common-Prayer: It therefore follows, that if the Church abide ſtill by its old Order, it muſt be of the Natural Full Moon, and not of a feign'd *Eccleſiaſtical* one, that the Rule is to be underſtood.

In the ſecond Volume 8vo. of Dr. *Prideaux*'s Connection of the Hiſtory of the Old and New Teſtament, pag. 236. it is ſaid, that the New and Full Moons are ſtated in the Calendar of our Common-Prayer Book, as the real New and Full Moons were, at the time of the Council of *Nice*. And again, in the Preface of the ſame Volume, p. 14. we are given to know, that the firſt Day of the Moon which is mark'd out by the Primes, in the Calendar of our Common Prayer-Book, *is not the Day of its Conjunction with the Sun, but the Day of its firſt Appearance*; *which is always the Day after its Conjunction.*

Hence therefore we are to underſtand, according to the Doctor, that the Conjunction of the Luminaries, at the time of the Council of *Nice*, were one Day ſooner than they are mark'd out by the Primes, in the Calendar of our Book of Common-Prayer. Thus for Inſtance, when the Golden Number is 3, which it was that very Year the *Nicene* Council ſat; we are to underſtand that the Conjunction of the Luminaries, in *March* that Year, was on the 30th Day of the ſaid Month, becauſe the Prime 3 marks out the 31ſt Day, for the Day of the Moon's firſt Appearance, and the *fourteenth Day from this Appearance*, ſays the Doctor, *being the fifteenth from its Conjunction, will be the real Oppoſition of the Sun and Moon.* Therefore the fourteenth Day of the Moon (counting the Day of its firſt Appearance for the firſt) or the true Oppoſition of the Sun and Moon, in *April* that Year, according to this, muſt be on the 13th Day, and ſo we find it in the Table when the Golden Number is 3; for the Doctor ſays, p. 237. that *Dionyſius*, when correcting the Paſchal Cycle, *anno* 527, fix'd the Moons at the ſame point of time which they were at, at the holding the Council of *Nice*.

But whoever firſt introduced this piece of Hiſtory into the World, we have great reaſon to think they were either Deſigning, or Ignorant, or both; for it ſeems to be advanced for no other Reaſon than to give a Sanction to their fictitious *Eccleſiaſtical* Full Moons, wherefore they have endeavoured either really, or ſeemingly, to make thoſe things agree together, which in the Nature of Things is impoſſible.

Thus they have endeavoured to make the Paſchal Full Moons in the Table, to agree with the New Moons, pointed out by the Primes *in the Calendar*; by making the World believe that theſe laſt are placed one Day later than the real Conjunction of the Sun and Moon at the time of the *Nicene* Council, and this too by the Appointment of the ſaid Council; and by making *Dionyſius* above 200 Years after, in reference to this great Work, to fix the Paſchal Full Moons, in his Tables alſo to the ſame time.

But this piece of Hiſtory does by no means agree to Aſtronomical Calculation, as will appear to any who will be at the pains to calculate the New and Full Moons of thoſe times. They will find, that *Dionyſius* did not fix the New and Full Moons, for the times of the *Nicene* Council, but to the time in which he is ſaid to correct the Paſchal Cycle, *viz.* about *Anno Chriſti* 527. Nor will they find the Moons a Day old on thoſe Days of the Month, which the reſpective Primes ſtand againſt at the time of the *Nicene* Council; but they will find that thoſe Figures point out the very Day of the Month on which the Sun and Moon were in Conjunction, about the time of the ſaid Council.

However, for the ſake of ſuch Readers, as either cannot, or will not take it upon them, to calculate the New and Full Moons of thoſe times, in order to ſatisfy themſelves in ſome Degree herein, I will exhibit the Calculation of the Paſchal Full Moon, for that Year in which the Council of *Nice* ſat; and alſo for that Year, in which it is ſaid, that *Dionyſius* corrected and publiſhed the Paſchal Cycle, *viz. Anno Chrſti* 325, and *Anno Chriſti* 527, from *Aſtro Carolina.*

	d	h	′	″
Anno Chriſti 325 in *April* the mean Oppoſition is	14	4	38	0
	ſ	°	′	″
The mean Anomaly of the Sun correſpondent	10	4	8	28
The mean Anomaly of the Moon	1	15	6	21
The true Longitude of the Sun from the Equinox	0	24	41	13
The firſt equated Place of the Moon in her Orbit	6	19	30	14
Difference from the Oppoſition wants	0	5	10	59
The hourly Motion of the Sun	0	0	2	25
Of the Moon	0	0	31	1
Difference of hourly Motions	0	0	28	36
	d	h	′	″
The Interval of the mean and true Oppoſition add	0	10	52	0
The equal time of the true Oppoſition	14	15	30	0

Hence it appears evidently that the Paſchal Full Moon, that Year in which the *Nicene* Council ſat, was on the 15th Day of *April*, about half an Hour after Three in the Morning with us, and not on the 13th Day, as it muſt; nay, it is what the Cyclian Computatiſt intends it ſhould be, by making the Conjunction on the 30th of *March*, one Day ſooner than the Prime 3 (the Golden Number for the Year of Chriſt 325) points out.

Hence alſo, If *Dionyſius* had fixed the New and Full Moons to the ſame point of Time which they were at at the Time of the Council of *Nice*, the Paſchal Full Moon would be found in the Table when

the Golden Number is 3, on the 15th Day of *April*, as we have found above, and becauſe the Characteriſtick of this Day is G. therefore the Line againſt the Prime 3 would have ſtood thus:
A B C D E F G A B
16 17 18 19 20 21 22, inſtead of thus, 16 17
C D E F G
18 19 20 14 15, as we find it in the perpetual Table; but the Truth is, *Dionyſius* calculated and fitted the Paſchal Moons to the time in which he is ſaid to correct the Paſchal Cycle, *viz.* to about *Anno Chriſti* 527, as will appear by the following Calculation:

	d	h	'	"
Anno Chriſti 527 the mean Oppoſition in *April* is	1	14	41	52
	ſ	o	'	"
The mean Anomaly of the Sun correſpondent	9	20	4	21
Of the Moon —— ——	3	5	28	19
The true Longitude of the Sun from the Equinox	0	13	32	1
The firſt equated Place of the Moon in her Orbit	6	6	41	0
Difference from the Oppoſition wants ——	0	6	51	21
The hourly Motion of the Sun ——	0	0	2	26
Of the Moon —— ——	0	0	33	23
The Difference of hourly Motions ——	0	0	30	57
	d	h	'	"
The Interval of the mean and true Oppoſition add	0	13	17	26
The equal time of the true Oppoſition ——	2	3	59	18

Hence we find, the Full Moon being calculated for *anno* 527, the Year in which *Dionyſius* is ſaid to have corrected the Paſchal Cycle, the Golden Number being 15. the Paſcal Term in the Table is ſo far from anſwering to the time of the *Nicene* Council, that it inclines the contrary way, and is found rather as they happen'd on this ſide of the time of *Dionyſius*, than the other, for the Paſchal Term is fix'd in the Table on the firſt of *April*, when the Golden Number is 15, which muſt be four

Hours at the leaſt ſooner than the Time here found. But this may eaſily be accounted for; for it is *very probable*, that *Dionyſius*, publiſhing his Paſchal Cycle *Anno* 527, had fix'd his Paſchal Terms for the Cycle before, and in regard (as is intimated below) that whenever the Paſchal Terms are fix'd on a Biſſextile Year, in their Return on a Common Year there will be a Retardation; but 527 is a Common Year, and nineteen Years before, when the Prime was 15, was Biſſextile, *viz*, 508. Wherefore, tho' we find the equal Time of the true Oppoſition in the Morning of the 2d Day, *Anno* 527, yet had we calculated for the Year 508, we ſhould have found it ſome Time on the Firſt Day. And, in like manner, being calculated for the Year 325, the Year in which the Council of *Nice* ſat, the Golden Number being then 3, we find the Full Moon on the 15th of *April*, but in the Perpetual Table againſt the Golden Number 3, the Paſchal Full Moon is found on the 13th of *April*; wherefore it is evident, beyond Contradiction, that *Dyonyſius* did not fix the New and Full Moons in his Paſchal Tables to the Time of the Council of *Nice*, as is aſſerted, but to about the Time that he is ſaid to have corrected the Paſchal Cycle.

Although from what has been already ſaid, appears the Abſurdity and manifeſt Falſities that they have been forced to advance, to countenance the perpetual Uſe of an erroneous Cycle (which might from time to time have been eaſily corrected) yet there is one thing ſtill behind, which I have not as yet taken Notice of, which, the Doctor himſelf ſays, is more material than all the reſt; the Objection is of his own raiſing, by anſwering of which, he undertakes to clear the whole Matter, and thereby juſtify the perpetual

Uſe of this erroneous Table. I will here recite the Objection in the Doctor's own Words.

' It may be objected (*ſays the Doctor*) that allowing the Full Moon mentioned in the Rule to be the *Eccleſiaſtical* Full Moon, and not the natural, yet the making *Eaſter-day* to be the next *Sunday* after that Full Moon, is contrary to the Rule which all other Churches have gone by, till Pope *Gregory's* Reformation of the Calendar, and contrary alſo to the preſent Uſage of our own.

' *Firſt*, It is contrary to the Rule which all other Churches have gone by, till the ſaid Reformation of Pope *Gregory*; becauſe, till then, from the Time of the Council of *Nice*, their Rule hath been, that *Eaſter-day* is always to be the firſt *Sunday* after the firſt Fourteenth Moon which ſhall happen after the 21ſt Day of *March*, which Fourteenth Moon is therefore called the *Paſchal Term*: But the Full Moon never happens till the 15th Day of the Moon; and therefore, to put *Eaſter-day* on the firſt *Sunday* after the ſaid Full Moon, will be to make the firſt Fifteenth Moon after the ſaid 21ſt Day of *March* to be the Paſchal Term inſtead of the Fourteenth, which no Church in the whole Chriſtian World hath ever yet done. And

' *Secondly*, It is contray to the preſent Uſage of our own Church. For in the Tables ſubjoined to the Calendar, *Eaſter-day* is every where put on the *Sunday* next after the firſt Fourteenth Moon after the 21ſt Day of *March*, and never otherwiſe; and therefore, ſhould *Eaſter-day* be always put according to the Rule abovementioned, on the next *Sunday* after the Full Moon of that Rule, ſeeing no Full Moon can ever happen till the 15th Day of the Moon, *Eaſter-day* would ſometimes fall on a

Sunday different from that where it is placed ‘ in the Tables.

‘ As for Example, *Anno* 1668, the placing of ‘ *Eaſter* on the firſt *Sunday* after the 15th Day ‘ of that Moon, would make it fall on the 29th ‘ of *March*, but the Tables place it on the 22d ‘ of *March*, which was the *Sunday* before, and ‘ then it was accordingly obſerved: And *Anno* ‘ 1678, the placing of *Eaſter* on the firſt *Sunday* ‘ after the 15th Day of that Moon, would make ‘ it fall on the 7th of *April*, but the Tables ‘ place it on the laſt of *March*, which was the ‘ *Sunday* before, and there it was accordingly ob‘ſerved; and ſo it will be found in many other ‘ Inſtances. And therefore, if the Rule by which ‘ all other Churches, till Pope *Gregory*'s Reforma‘tion of the Calendar abovementioned, obſerved ‘ their *Eaſter* be right, and if the Tables whereby ‘ our Church keeps that Feſtival be right, then ‘ the Rule which is in our Common-Prayer‘Book muſt be falſe, and conſequently cannot ‘ be aſſented to as true.’ Thus far the Doctor with regard to the Objection; his Anſwer ſhall follow preſently: But in the mean time I cannot but obſerve, that this Error is repeated in every Period of 532 Years no leſs than 84 times, and of theſe, in this and the laſt Age, in the Interval of about 142 Years, no leſs than 20 times, *viz. Anno* 1631, 1634, 1648, 1651, 1652, 1654, 1658, 1668, 1678, 1682, 1695, 1702, 1722, 1726, 1729, 1746, 1749, 1753, 1763, 1773.

Here follows the Doctor's Anſwer, *viz.* ‘ There ‘ is (*ſays the Doctor*) a two-fold Reckoning of ‘ the Moon's Age, the Aſtronomical and the ‘ Vulgar; the Aſtronomical Reckoning is from ‘ the Conjunction of the Moon with the Sun, ‘ the Vulgar, from its firſt Appearance, which is

‘ never till the next Day after its Conjunction.
‘ The *Jews* followed the Vulgar Reckoning, and
‘ according thereto accounted that to be the firſt
‘ Day of the Moon which was the firſt Day of
‘ its Appearance, and by this Reckoning ſettled
‘ the Times of their Paſchal Feſtival; which Uſage
‘ the ancient Chriſtians borrow'd from them, did
‘ the ſame in ſettling the Feaſt of *Eaſter*, and ſo
‘ it hath continued to be done ever ſince. The
‘ firſt Day therefore of the Moon, which is marked
‘ out by the Prime in the Calendar of our Common-Prayer-Book,
‘ *is not the Day of its Conjunction
‘ with the Sun, but the Day of its firſt Appearance,
‘ which is always the Day after, and
‘ the 14th Day from thence is the 15th from its
‘ Conjunction*, on which 15th Day the Full Moon
‘ happens, which, being apply'd to the Paſchal
‘ Moon, ſolves the whole Difficulty of this Objection;
‘ for the 14th Day of that Moon, as
‘ reckoned from its firſt Appearance, will be from
‘ its Conjunction the 15th Day, on which the Full
‘ Moon happens, and therefore this 14th Day of
‘ the Moon being the ſame with the Full Moon,
‘ and both the ſame with that which hath ever been
‘ the Paſchal Term, may be expreſſed by either
‘ of them; and therefore, this Rule in the Calendar
‘ of our Common-Prayer-Book, in that it
‘ expreſſeth it by the Full Moon, does the ſame
‘ as if it had expreſſed it by the 14th Day of
‘ the Moon, and conſequently it is not to be
‘ charged with any Fault or Error in the Matter.

Here it may be obſerved, that the main Thing by which the Doctor gains his Point, in his Anſwer to this Objection is, from an Uſage of the ancient Chriſtians, which they had borrowed from the *Jews*, *viz.* of accounting that to be the firſt Day of the Moon which was the firſt Day of its Appearance, which, he ſays, was always the Day after the Conjunction; and thence concluding, that *therefore the firſt Day of the Moon, which is mark'd out by the Primes in the Calendar, is not the Day of its Conjunction with the Sun, but the Day of its firſt Appearance.* But I have ſufficiently proved above, that thoſe Days of the Month, mark'd out by the Primes in the Calendar of our Common Prayer-Book, were the Day of the Conjunction of the Luminaries at the time of the *Nicene* Council, and not the Day of the Moon's firſt Appearance, as is aſſerted by the Doctor, which is always the Day after; and therefore the 14th Day of the Moon, reckon'd from hence, cannot be *the* 15*th, but the* 14*th Day from its Conjunction.* And ſince the ſhorteſt Lunation conſiſts of 29 Days, (the half of which being 14 Days and 12 Hours) it will follow, that the Full Moon will always be on the 15th Day of the Moon's Age; wherefore the 14th Day of the Moon cannot be the ſame with the Full Moon, as the Doctor aſſerts, and conſequently there will ſometimes be a Contradiction between the Table and the Rule, as is objected (and as the Inſtances above ſhew) tho' we ſhould even underſtand it of an *Eccleſiaſtical* Full Moon.

Hence therefore it is evident, that if we ſhould underſtand the Rule of an *Eccleſiaſtical* Full Moon, we ſhall by this means bring in the Rule defective, becauſe it expreſſes the Paſchal Term by the Full Moon, which is always on the 15th Day of the Moon's Age, notwithſtanding it is every where put in the Perpetual Table, on the 14th Day of the Moon; and becauſe in this too it contradicts the Rule that all other Churches have gone by, till Pope *Gregory*'s Reformation of the Calendar.

But the Truth is, theſe *Eccleſiaſtical* Full Moons are merely Chimerical, being only introduced to keep pace with the wid'ning Defect of their Cyclian Tables, and we may depend upon it, that the Clauſe *Full Moon* in the Rule was, when it was put there, intended to be underſtood of the natural Full Moon: for we may further obſerve, that ſince ſo great and learned a Perſon as Dr. *Prideaux* has been ſo hard put to it, as to be forced to defend the Cauſe by mere Conjecture only, and which I have proved to be a manifeſt Falſity, any One may ſafely conclude there muſt be ſomething that is not right in the Affair, and therefore conſequently wants Correction. Hence therefore what I have done, and propoſed with regard to this in the following Pages, cannot be thought unneceſſary.

Unneceſſary did I ſay; how can it be ſo in any degree, unleſs what was done at the *Nicene* Council, and by *Dionyſius* (with regard to *Eaſter*) was unneceſſary. For ſince it is allow'd that theſe *Eccleſiaſtical* Full Moons were at thoſe times coincident with the natural; and ſince the Reaſon of the Difference, which is now found between them, is owing to a certain Defect, which hath cauſed their *Eccleſiaſtick* Full Moons to remain ſtationary, with reſpect to Time, which cannot but be wiſh'd, even by all, that they were otherwiſe, *i. e.* that the time of the Full Moon, both of the Natural and *Eccleſiaſtical*, had never ſeparated, but had continued to happen (as they once did) at one and the ſame time; I ſay, this is what the greateſt Aſſertors of the Cyclian Method of determining *Eaſter* cannot but greatly deſire, but this is what I have here affected. I have given a Motion (if one may ſo term it) to their *Eccleſiaſtical* Full Moons, ſo that they are now become coincident with the natural Full Moons; and ſince by ſome odd Accident their *Eccleſiaſtical* New Moons had alſo in like manner become ſtationary, upwards of 200 Years before their

Full Moons became ſo, and by this means making their Full Moons always on the 14th inſtead of the 15th Day of their Moon's Age, and thereby often making their Feaſt of *Eaſter* to begin on a Day different from what they themſelves deſigned it ſhould begin. Since, I ſay, theſe things are ſo, can it be thought a thing unneceſſary? nay, will it not be thought a thing deſirable? even by the Computatiſts themſelves, to have theſe Obſtacles removed. Now if what I have here done be complied with, theſe Obſtacles will be removed, and the Feaſt of *Eaſter* may be again obſerved, according as the Church deſign'd it ſhould be obſerved, and that too, whether the Rule be underſtood of an Eccleſiaſtick, or of a Natural Full Moon.

THE

THE
INTRODUCTION,

OR,

Preparatory Propoſitions for the better underſtanding the following Pages, neceſſary for ſuch as are not much converſant in the Writings of Chronologers. With an Analytical Solution of two curious Chronological

PROBLEMS.

SInce I ſhall often have occaſion in the following Work to mention theſe Chronological Characters, the Cycle of the Sun, the Cycle of the Moon, or Golden Number, and the Epacts, *&c.* It cannot be altogether improper to ſhew what is meant by them, and alſo the uſual Method of determining them.

The Cycle of the Sun is ſo called, not becauſe it contains any certain Period of the Sun's Motion, but as it contains a Revolution of the Dominical Letters, which is compleated in 28 Years, after which, the Dominical Letters return again in the ſame Order.

For the ſeven firſt Letters of the Alphabet being accommodated to the ſeven Days of the Week; and ſince this ancient Collection of Days, is no aliquot Part of a Year, *i. e.* of 365 Day this Cycle cannot be finiſhed in one Year, for $\frac{365}{7}=52\frac{1}{7}$; but did the Year conſiſt of 365 Days only, as we have it in all common Years, this Cycle would be finiſhed in ſeven Years, and the Dominical Letters would return again in the ſame Order after that Space of Time; but ſince the *Julian* Year conſiſts of $365\frac{1}{4}$ Days, there is not any Number of ſuch Years leſs than 28, that will be exactly meaſured by theſe 7 Days.

The Cycle of the Moon is that Space of Time after which the Lunations are ſuppoſed to return, not only on the ſame Day of the *Julian* Year, but alſo on the ſame Hour and Minute of that Day: Now the Space of Time, made uſe of for this purpoſe among us, is the Space of 19 *Julian* Years, after which Interval it is ſuppoſed the new and full Moons perpetually return the ſame; but in fact they do not, for an Interval, in which they do really return, hath not yet been found out.

Indeed *Vieta* is ſaid to have found out a Period of 3400 *Julian* Years, which comes very near the Matter, for in this great Interval, there would be but an Anticipation of 2228 Minutes $= 37^h: 8'$ ſuppoſing the Length of one Lunation, but $29^d: 12^h: 44 = 42524$ Minutes; for if 525960, the Minutes in one *Julian* Year, be multiply'd by 3400, and divided by 42524, there will reſult 42053 Lunations, and 2228 remaining, *viz.*

$\frac{525960 \times 3400}{42524} = 42053\frac{2228}{42524}$; but if the length of one Lunation be taken more exact, *viz.* $29^d\ 12^h\ 44'\ 3'' = 2551443''$ Seconds, then $\frac{525960 \times 3400 \times 60}{2551443} = 42053\frac{7521}{2551443}$ have an Anticipation of but 7521 Seconds $= 125'\ 21''$, a very ſmall Matter this, in ſo large a Space of Time; but I think it is ſaid that *Vieta* did affirm, that in 3400 *Julian* Years there are contained 42053 Lunations exactly, which by my Calculation I cannot find; nay, *Clavius* pronounceth it impoſſible hence to be done, except a Lunation contain $29^d : 12^h : 44' : 3'' : 10''' : 43''''$, which if it do, I do not find that this will exactly meaſure 3400 *Julian* Years: for if $525960 \times 60''\ 60''' \times 60'''' \times 3400 = 386265024000000 =$ the Fourths in that Space be divided by $29^d : 12^h : 44' : 3'' : 10''' : 43''''$, $= 9185195442$ Fourths there will reſult $42053\frac{35521}{9185195442} = 42053$ Lunations and 53521 Fourths remaining $= 9'' : 52''' : 1''''$, wanting but ſo ſmall a Matter of an exact Reſtitution; but I cannot conceive how ſuch large Periods can any way be accommodated to Civil Affairs, hence I preſume that Period of *Metons* *, which we now have conſiſting of 19 *Julian* Years, hath been preferred not ſo much on account of its Accurateneſs, as for its Smallneſs, and therefore more expedient in Civil Affairs.

That this Cycle is defective is manifeſt, for $\frac{525960 \times 60 \times 19}{2551443} = 235\frac{5295}{2551443}$ Lunations have an Anticipation of 5295 Seconds $= 88' : 15'' = 1^h$:

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* Meton *an* Athenian *is ſaid to have publiſhed this Cycle at* Athens *in the Year before Chriſt* 432.

28′ 15″ in 19 *Julian* Years, and conſequently 1 entire Day in about 310 ſuch Years.

The Epacts are the Difference by which the Days of the Solar Year exceed the Lunar, which is 11 Days, and are uſed for reducing the Motion of the Moon to that of the Sun, ſo near as is neceſſary in an ordinary way, to determine the new and full Moons, and are generally joined to each Year of the Lunar Cycle, and are form'd by perpetually adding of 11 Days, and ſubſtracting of 30, ſo often as the Aggregate exceeds that Number. See the adjoining Table.

G.N.	Epact.
1	XI
2	XXII
3	III
4	XIV
5	XXV
6	VI
7	XVII
8	XXVIII
9	IX
10	XX
11	I
12	XII
13	XXIII
14	IV
15	XV
16	XXVI
17	VII
18	XVII
19	XXIX
1	XI

The Cycle of Indictions is a Period conſiſting of 15 Years, and is ſaid to have been firſt brought into uſe about the Year of Chriſt 312; but the Reaſon of their being thus call'd, and for what Purpoſes they were at firſt intended, Authors do not agree; ſome ſay they were at firſt inſtituted on Account of the Tribute, that was wont to be paid to the *Roman* Emperors by their Subjects, hence, I ſuppoſe, call'd the *Roman* Indiction.

The *Dionyſian* Period is a Period conſiſting of 532 Years, in which Space of Time, the Cycle of the Sun and Moon become coincident, and take their Beginning together. This Period is obtained by multiplying 28 by 19, the Cycle of the Sun into that of the Moon, and was introduced by *Dionyſius* (as is generally thought) for determining the Time of *Eaſter*, thence called the Paſchal Cycle.

The *Julian* Period is a Period conſiſting of 7980 Years, in which Space of Time, the Cycle of the Sun and Moon, and that of the Indictions, all three take their Beginning together, and once in 7980 Years, and not oftener, theſe three Chronological Characters will come the ſame. And as it is generally allow'd, that the compleat Years of this Period, at our Lord's Nativity, according to the Vulgar Æra, were 4713, ſo it will follow that the Cycle of the Sun was then 9, the Golden Number one, and the *Roman* Indiction 3, and no other Year in the whole Period can poſſibly have all theſe three Characters the ſame. Upon which Account this Period is ſometimes called the univerſal Period as being a common Receptacle of all true Epochas. This Period ariſeth by the continual Multiplication of 28, 19, and 15.

The Method of determining any of theſe take as follows.

1. Having the Year of our Lord given to find the Cycle of the Sun:

Divide the given Year (firſt increaſed by 9) by 28, the Numerator of the Fractional Part of the Quotient, if there be any, will ſhew the Cycle required; if none, then take the Diviſor itſelf for the Cycle: Thus for the Years 1736, 1737, 1738, the Cycle of the Sun will be found 9, 10, 11, for $\frac{1736+9}{28}=62\frac{9}{28}$ and $\frac{1737+9}{28}=62\frac{10}{28}$ alſo $\frac{1738+9}{28}=62\frac{11}{28}$ the Numerator of the Fractional Part of the Quotients, *viz.* 9, 10, and 11 ſhews the Cycle of the Sun for the Year propos'd, and the Integer Part of the Quotients 62 ſhews the Number of Revolutions ſince the firſt Year before the Vulgar Æra of Chriſt.

2. Having the Year of our Lord given to determine the Cycle of the Moon or Golden Number:

Divide the given Year (firſt increaſed by Unity) by 19, the Numerator of the Fractional Part of the Quotient, if there be any, will ſhew the Golden Number; if none the Diviſor itſelf will ſhew the Golden Number: Thus the Golden Number will be found for the aforeſaid Years 8, 9, and 10, for $\frac{1736+1}{19}=91\frac{8}{19}$ and $\frac{1737+1}{19}=91\frac{9}{19}$ alſo $\frac{1738+1}{19}=91\frac{10}{19}$ and 91 the Integer Part of the Quotients ſhew that there have been compleated 91 Cycles, ſince the firſt Year before the Birth of Chriſt, according to the Vulgar Æra.

3. The Epacts may be found for any Year of our Lord requir'd, by multiplying the Golden Number for that Year by 11, and dividing the Product by 30 (the Remainder) neglecting the Quotient, will ſhew the Epact: Thus the Epact for 1736 and 1737 will be found 28, and 9, as in the foregoing Table againſt the Golden Number 8 and 9.

4. In any given Year of our Lord to find the *Roman* Indiction, divide the given Year (firſt increaſed by 3) by 15, the Numerator of the Fractional Part of the Quotient, if there be ſuch,

will ſhew the Indiction; if none, the Diviſor itſelf will ſhew it.

Thus the Indiction for 1737, 1738, will be found 15 and 1 for $\frac{1737+3}{15} = 116$, and $1738+3 = 116\frac{1}{15}$ in the firſt of theſe, there being no Fractional Part of the Quotient, therefore the Diviſor 15 is the Indiction.

5. If it ſhould be requir'd to find the Cycle of the Sun or the Cycle of the Moon for any given Year of the Paſchal Cycle, it is but dividing ſuch Year by 28 and 19 ſeparately, the reſpective Remainders will ſhew the Cycle of the Sun and Golden Number; thus let 66 be the Year propoſed, the Cycle of the Sun will be found 10, and the Golden Number 9, for $\frac{66}{28} = 2\frac{10}{28}$ and $\frac{66}{19} = 3\frac{9}{19}$, and if there be no Remainder, and conſequently no Fractional Part of the Quotient, in that Caſe the Diviſors themſelves will ſhew the Cycle of the Sun and Golden Number.

6. In like manner if it were requir'd to find the Cycle of the Sun, Cycle of the Moon, and *Roman* Indiction for any given Year of the *Julian* Period; we muſt divide ſuch Year ſeparately by 28, 19 and 15, the reſpective Remainders, or the Numerators of the Fractional part of the reſpective Quotients (if ſuch there be) will ſhew their reſpective Characters; if none, the Diviſors themſelves will ſhew them.

7. Again, ſuppoſe it were required to find what Year of the Paſchal Cycle will coincide with any given Year of our Lord. This will be had by dividing the Difference between 75 and ſuch Year by 532: the Numerator of the Fractional Part of the Quotient (if there be any) will ſhew the Year of the Cycle; but if there be

none, then the Diviſor itſelf is the Year ſought; and the Integer Part of the Quotient ſhews the Number of Revolutions that can be taken, ſince the Chriſtian Æra. For the firſt Year of this Period coincides with the 76th Year of Chriſt, and conſequently with the Years 608, 1140, 1672, 2204. Thus the Year of our Lord 1582 will be found to coincide with the 443d of the Paſchal Cycle, and the preſent Year 1737 with the 66th of the ſame, for $\frac{1582-75}{532} = 2\frac{443}{532}$ and $\frac{1737-75}{532} = 3\frac{66}{532}$.

8. In like manner it may be found what Year of the *Julian* Period will coincide with any given Year of Chriſt, by only taking the Aggregate of ſuch Year, and 4713, the compleat Years of the Period, before the Vulgar Æra of Chriſt.

Thus the Year of the *Julian* Period, anſwering to the Year of Chriſt 1582, will be found 6295, and to the preſent Year 1737, will be found 6450, for $1582 + 4713 = 6295$ and $1737 + 4713 = 6450$.

9. Hence alſo it is eaſy to find what Year of the *Julian* Period will coincide with any given Year before Chriſt, for this will be had by ſubſtracting ſuch Year from 4714, the Year of the *Julian* Period which coincided with the firſt Year of Chriſt; and therefore conſequently, we may find the Connection of any particular Epocha, to the Year of the *Julian* Period, and alſo the Characters for ſuch Years will be eaſily known (by the 6 above.)

Thus for Example, the Epocha of the World's Creation, about which, indeed, there are ſeveral Controverſies, ſome making it 4004 Years before the Common Æra of Chriſt; as we have it, I preſume, from Biſhop *Uſher*'s *Annals* in the Index of the *Holy Bible*, and therefore connected with the 710th Year of the *Julian* Period, having 10 for the Cycle of the Sun, and therefore the Dominical Letter B, 7 for the Cycle of the Moon, or Golden Number, and 5 for the Indiction. For $4714 - 4004 = 710$, then $\frac{710}{28} = 25\frac{10}{28}$ and $\frac{710}{19} = 37\frac{7}{19}$ alſo $\frac{710}{15} = 47\frac{5}{15}$, the Numerators of the Fractional Part of the Quotients ſhew the reſpective Characters for the Year of the Creation, according to theſe Chronologers, *viz.* the Cycle of the Sun 10, the Dominical Letter B, the Golden Number 7, and the Indiction 5 *. But *Kepler* makes it 3993 Years before Chriſt. “*Helvetius* in the 3963 Year current before Chriſt, on the 24th of *October* of the *Julian* Year continued backwards, at 6 o'Clock in the Evening in the Meridian of *Eden*, becauſe he found in the Tables of the Sun, that at that Time, the Sun was in the Beginning of *Libra*, and its *Apogeum* in the Beginning of *Aries* †.” Others make it different from theſe as 3983, and with theſe *Petavius* agrees; ſome again make it of a much ancienter Date, as *Euſebius* 5199 Years before Chriſt; but thoſe who come neareſt the Truth (ſays *Gaſſendus*) are thoſe who make it 3950 Years before the common Æra of Chriſt; whch is alſo approved of by the *French* Aſtronomers.

10. If the Cycle of the Sun and Golden Number be given, the Year of the Paſchal Cycle, which will have both theſe given Characters, may be found by multiplying the Cycle of the Sun by 57, and the Golden Number by 478, and

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* *See the Margin of the great Bible againſt the Beginning of the firſt Chap. of* Gen.

† *See Dr.* Gregory's *Aſtronomy, Vol. I. B. 2. Sect. 2. prop.* 12.

dividing the Aggregate of their Products by $532 = 19 \times 28$: the Remainder neglecting the Quotient, will be the Number of the Year ſought.

For Example, admit the Cycle of the Sun were 10, and the Golden Number 9, as they are this preſent Year 1737, and without knowing the Year of our Lord, the Year of the Paſchal Cycle will be found 66; for $10 \times 57 = 570$, and $9 \times 476 = 4284$, but $\frac{4284 + 570}{532}$ will have a Remainder of 66.

11. If the Cycle of the Sun, Golden Number, and Indiction be all three given, the Year of the *Julian* Period, which will have all theſe three Characters, may be found, by multiplying the Cycle of the Sun by 4845, the Golden Number by 4200, and the Indiction by 6916, and then dividing the Aggregate of their Product by 7980, the Remainder neglecting the Quotient, will ſhew the Year of the *Julian* Period ſought.

For Example, ſuppoſe the Year of the *Julian* Period were ſought when the Cycle of the Sun is 10, the Golden Number 9, and the Indiction 15, it will hence be found 6450, and no other Year throughout the whole Period of 7980, can have all theſe three Characters ſuch. Thus $4845 \times 10 = 48450$, and $4200 \times 9 = 37800$, alſo $6916 \times 15 = 113740$; but $\frac{48450 + 37800 + 113749}{7989}$ will have a Remainder of 6450.

How theſe particular Multiplicators for finding the Year of the Paſchal Cycle, and the Year of the *Julian* Period are found, is not, I believe, ſo commonly known, as uſed. I ſhall therefore exhibit a Method for finding them out.

Firſt, With regard to the Paſchal Cycle, it is evident that the firſt Year of this Period has always an unite both for the Cycle of the Sun and Golden Number, and the firſt 19 Years of this Period, muſt have the Number of the Period, and theſe two Characters the ſame.

Now the firſt Year of this Period will emerge, if we divide $28\times19=532$ increaſed by an Unite by 532, that is $\frac{532+1}{532}$ will have an Unite remaining; and $532+1$, or ſome Multiple of 532 increaſed by 1, will be the Aggregate of two ſuch Numbers as hath the ſame Properties in both, as is found in $532+1$; for as $\frac{532+1}{28}$ and $\frac{532+1}{19}$ alſo $\frac{532+1}{19\times28}$ leaves 1 for a Remainder, ſo one of the Number being divided by 28, and the other by 19, and their Aggregate by 19×28 muſt leave 1 for a Remainder; for it is a known Property in Numbers, that if there be two Numbers, a and b, and if two others c and d be taken, ſo that if $\frac{a}{d}$ have a Remainder of 1, and $\frac{a}{c}$ have nothing remains, and alſo if $\frac{b}{c}$ have a Remainder of 1, and $\frac{b}{d}$ have no Remainder, then $\frac{a+b}{c}$ and $\frac{a+b}{d}$ alſo $\frac{a+b}{c\times d}$ will all have a Remainder of an Unite, but $a+b$ is the Aggregate of the two Numbers, and becauſe $\frac{a+b}{c}$ and $\frac{a+b}{d}$ and $\frac{a+b}{c\times d}$ leave 1 remaining, therefore $a+b-1$ will be a Multiple of c and d, alſo of $c\times d$; wherefore becauſe $533-1$, or $533-1\times2$. &c. is a Multiple of 28 and 19, alſo of 28×19, we may conclude that $532+1$, or ſome Multiple of 532 increaſed by 1, will be the Aggregate of the two Numbers ſought; hence the following Problem will be manifeſt.

1. There is ſought two ſuch Numbers, that if the firſt be divided by 19 there will nothing remain, but if divided by 28 there will remain 1; likewiſe if the ſecond be divided by 28 there will be no Remainder, but if divided by 19 there will remain an Unite.

Becauſe the firſt Number is diviſible by 19, it muſt therefore be ſome Multiple of 19, and may be expreſſed by $19x$, and becauſe $\frac{19x}{28}$ hath a Remainder of 1, therefore $\frac{19x-1}{28}$ will bean integer Number, for which may be put m. *i.e.* $\frac{19x-1}{28}=$ and $19x-1=28m$ wherefore $x=\frac{28m+1}{19}$ make the Remainder $\frac{9m+1}{19}=n$; then by multiplying by 19, and tranſpoſing of 1 we ſhall have $m=\frac{19n-1}{9}$, but $18n$ is diviſible by 9, wherefore make the Reſidue $\frac{n-1}{9}=r$: then by ordering as before we ſhall have $n=9r+1$. This being now brought as low as it can be; as being not capable of any further Diviſion if we take $n=1$, then $\frac{19n-1}{9}=2=m$, and $\frac{28m+1}{19}=3=x$, wherefore $19x=57$, the firſt Number ſought.

2 Again, becauſe the ſecond Number is diviſible by 28, it muſt be ſome Multiple of 28, ſuppoſe $28y$, then becauſe $\frac{28y}{19}$ leave 1 remaining, therefore $\frac{28y-1}{19}$ will be an integer Number.

But 19 can be had in 28 once, wherefore make the Reſidue $\frac{9y-1}{19}=m$, then $9y-1=19m$, and by ordering as above there will Reſult $y=\frac{19m+1}{9}$. But 9 exactly meaſures 18 m, and put the Reſidue $\frac{m+1}{9}=n$, which by ordering as above we ſhall have $m=9n-1$. Now here again, if we take $n=1$, then will $9n-1=m=8$, and $\frac{19m-1}{9}=y=17$; wherefore $28y=476$, which is the ſecond Number ſought.

Now in order to ſearch out the Numbers by which the Year of the *Julian* Period may be found, having the three Characters, the Cycle of the Sun, the Golden Number, and Indiction given, here alſo it will be neceſſary to conſider this Period in its Beginning, for we may imagine, nay, it is certain we muſt or may aſſign, a Beginning to it; tho' it is evident it muſt be before the Creation of the World.

Now the firſt Year of this Period, it is manifeſt, muſt have all the three before-mentioned Characters an Unite, but in order to make this Unite emerge by having 1, 1, 1, for the Cycle of the Sun, Golden Number and Indiction, and 7980 for a Diviſor, will be to divide $7980+1$, by 7980, or ſuch Multiple of 7980 increaſed by 1, as is capable of being the Aggregate of three ſuch Numbers having the ſame Properties with $7980+1$ or ſuch Multiple of 7980, increaſed by an Unite as is capable.

For if there be three Numbers a, b, and c, if we take other three, *viz.* d, e, f, then if $\frac{a}{d}$ have a Remainder of 1, and $\frac{a}{e\times f}$ have no Remainder;

alſo if $\frac{b}{e}$ have a Remainder of 1, and $\frac{b}{d\times f}$ have no Remainder: Likewiſe if $\frac{c}{f}$ have a Remainder of 1, and $\frac{c}{d\times e}$ have no Remainder, then $\frac{a+b+c}{d}$ and $\frac{a+b+c}{e\times f}$, alſo $\frac{a+b+c}{e}$ and $\frac{a+b+c}{d\times f}$: Likewiſe $\frac{a+b+e}{f}$ and $\frac{a+b+c}{d\times e}$ will all have a Remainder of an Unite; but $a+b+c$ is the Aggregate of the three Numbers they repreſent, and $a+b+c-1$ is a Multiple of d, and $e\times f$; alſo of e, and $d\times f$: Likewiſe of f, and $d\times e$. Wherefore becauſe $7981-1$, or $\overline{7981-1}\times 2$, &c. is a Multiple of 28, and 19×15 alſo of 19, and 15×28 likewiſe of 15, and 19×28, it is evident that $7980+1$, or ſome Multiple of 7980 increaſed by 1, will be the Aggregate of the three Numbers ſought.

Hence the Reaſon of the Conditions of the following Problem will be manifeſt.

2. There is ſought three Numbers, the firſt of which being divided by 28, there will be an Unite remaining, but being divided by $15\times 19=285$, there will be no Remainder; alſo if the ſecond be divided by 19, there will be an Unite remain, but being divided by $15\times 28=421$, there will nothing remain: Likewiſe, if the third be divided by 15, there will be a Remainder of 1; but being divided by $19\times 28=532$, there will be no Remainder.

Now becauſe the firſt Number is diviſible by 285, it muſt be ſome Multiple thereof. Suppoſe $285x$, and becauſe $\frac{285x}{28}$ hath 1 remaining, therefore $\frac{285x-1}{28}$ will be an integer Number;

but $280x$ is diviſible by 28, wherefore make the Reſidue $\frac{5x-1}{28}=m$ and $5x-1=28m$, then by Tranſpoſition and Diviſion there will come out $x=\frac{28m+1}{5}$: but 5 will exactly Meaſure $25m$, wherefore put the Remainder $\frac{3m+1}{5}=n$, then $3m+1=5n$, and by ordering as before we ſhall have $m=\frac{5n-1}{3}$ make the Remainder $\frac{2n-1}{3}=r$, and $2n-1=3r$, and $n=\frac{3r+1}{2}$; but $2r$ is diviſible by 2, make therefore the Reſidue $\frac{r+1}{2}=l$ then by multiplying by 2 we have $r+1=2l$, but there being now no further Diviſion, we muſt here end, and if we take $r=1$, then $\frac{3r+1}{2}=n=2$, and $\frac{5n-1}{3}=m=3$, and $\frac{28m+1}{5}=x=17$, and $285x=17\times 285=4845$, which is the firſt Number ſought.

Alſo becauſe the ſecond Number is diviſible by 420, it muſt therefore be ſome Multiple of 420 make $420y=$ the Number, then becauſe $\frac{420y}{19}$ hath a Remainder of 1, therefore $\frac{420y-1}{19}$ will be an integer Number; but 418 is diviſible by 19, wherefore make the Reſidue $\frac{2y-1}{19}=m$; and $2y=19m+1$, then by dividing by 2 we have $y=\frac{19m+1}{2}$; but $18m$ divides exactly by 2, wherefore put the Remainder $\frac{m+1}{2}=n$ and $m+1=2n$, and $m=2n-1$, here if we take $n=1$, then $2n-1=m=1$, and $\frac{19m+1}{2}=y=10$, and $420y = 10 \times 420 = 4200$, the ſecond Number ſought.

In like Manner the third Number may be found, for ſince it is diviſible by 532, it muſt be ſome Multiple of 532; ſuppoſe $532z$, then becauſe $\frac{532z}{15}$ hath 1 remaining, therefore $\frac{532z-1}{15}$ will be an Integer, but $525z$ will divide by 15, make the Reſidue $\frac{7z-1}{15} = m$, then $7z - 1 = 15m$, and $z = \frac{15m+1}{7}$, but $14m$ is diviſible by 7, wherefore put the Remainder $\frac{m+1}{7} = n$, then $m + 1 = 7n$, here the Work ends, for we can divide no further; if we therefore take $n = 1$ then m will be found equal 6, and z equal 13, whence $532z = 532 \times 13 = 6916$, the third Number ſought.

SECT. I.

An Explanation of the ſeveral Sorts of Years uſually mentioned by Aſtronomical and Chronological Writers, and of the Correction of the Ægyptian Year by Julius Cæſar; *and the* Julian 1627 *Years after by Pope* Gregory XIIIth, *and of the Method then took by the Pope in correcting the Calendar, and Paſchal Feaſt.*

BEFORE I proceed to the main Thing intended in the following Pages, (which is to aſſign and prove the true Cauſe of the frequent Contradictions that are found between the perpetual Table, and the Rubrick in the Book of Common Prayer, with regard to *Eaſter*) it may be neceſſary, ſince we find ſo many People attribute the Cauſe thereof wholly to the Defect of the *Julian* Method of Computation; to ſhew wherein this Defect conſiſts, and how our Calendar comes to differ now 11 Days from thoſe who have the correct Calendar as they call it.

In order hereunto, it may not be improper to take Notice of the ſeveral Sorts of Years, and the Diſtinction that is uſually made between one and another.

Now a Year is that Space of Time which the Sun takes to run through the Zodiac, and is of two Sorts, *viz.* Aſtronomical and Civil; again the Aſtronomical Year is diſtinguiſhed into two ſorts, according to the different Bounds of the Sun's Revolution, *viz.* the Tropical and the Syderial.

The Tropical Year is that Space of Time wherein the Sun moves from one of the Cardinal Points, the Equinoctial, or Solſtitial, till it return to the ſame again, and is 365 Days, 5 Hours, 49 $\frac{1}{3}$ Minutes nearly. See Dr. *Gregory*'s Aſtronomy, Vol. I. Book 2.

The Syderial Year is that Space of Time that the Sun takes in paſſing from a fixed Star to the ſame fixed Star again, and is 365 Days, ſix Hours, and nearly 10 Minutes. See the above cited Author.

A Civil Year is ſuch a Space of Time as is inſtituted, and received, and is become the ſettled Cuſtom of any Nation; this ſort of Year is ſometimes govern'd by the Sun, ſometimes by the Moon, and ſometimes by both.

Hence there are three Forms of the Civil Year, *viz.* either purely Solar, or purely Lunar, or Luniſolar which is made up of both; but of theſe Lunar Years which are obſerved among the *Arabians*, *Indians*, *Turks*, and *Grecians*, let it ſuffice juſt to have mentioned them. *

The Solar Year is of three ſorts, and each of theſe is fitted to the Motion of the Sun: and the Viciſſitudes of the Seaſons are ruled and governed thereby, to wit, the *Egyptian*, *Julian*, and *Gregorian*. (See the above cited Author, Vol. I. Book 2.)

The *Egyptian* Year conſiſted of 365 Days only, which being divided into 12 Months, each Month contained 30 Days, and the 5 odd Days were added at the End of the 12 Months; ſo that the *Egyptian* Year wanted of the Solar Tropical Year ſomething above 5 Hours and 49 Minutes.

Hence it is evident, that this Year being ſo very much too little, its Beginning would anticipate near a Day in 4 Years; ſo that, in leſs than 1460 Tropical Years, its Beginning would run through all the Seaſons of the Year, and conucr again, in its Beginning, with the Tropical Year.

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* See *Sturmius's Matheſis Juvenilis*, Vol. III. Sect. 3. chap. 2. of *Political Chronology*.

Julius Cæſar, about 45 Years before our *Saviour*'s Birth, finding the *Egyptian* Year too little for the Solar Tropical Year, added thereto 6 Hours; and becauſe thoſe odd Hours could not be computed, in Civil Uſe, till they aroſe to a Day, they therefore were neglected for three Years ſucceſſively; and in the fourth Year, when they aroſe to a Day, one Day more was added to the Month of *February*, the ſame as we do here in *Britain* to this Day.

Hence therefore this Year has a twofold Form, *viz.* 3 common Years following each other of 365 Days a piece, and the fourth Year, which is called Biſſextile, or Leap Year, of 366 Days; wherefore the mean *Julian* Year conſiſts of 365 Days and 6 Hours, which is longer than the Solar Tropical Year by almoſt 11 Minutes, *viz.* 10′: 48″. for 365*d*: 6*h*.—365*d*. 5*h*: 4′9$\frac{1}{5}$ = 10′$\frac{4}{5}$ 10. 48″

Hence it follows, that the Beginning of this Year alſo muſt neceſſarily by degrees fall later and later, with regard to the Seaſons; or which is the ſame, the Equinoxes and Solſtices will fall ſooner and ſooner, with regard to the Days of this Year.

And becauſe this Anticipation of the Equinoxes and Solſtices are about 10$\frac{4}{5}$ Minutes in one Year, it will therefore follow, that in 133$\frac{1}{3}$ Years it will amount to a Day; for if 1440, the Minutes in one Day, or 24 Hours, be divided by 10$\frac{4}{5}$ there will reſult 133$\frac{1}{3}$. So that in about 1466 Years, which was from about *Anno Chriſti* 271, *i.e.* about 54 Years before the Council of *Nice* to 1737, the Equinoxes, *&c.* have anticipated 11 Days. But it is ſince the Correction of the Calendar by *Julius Cæſar*,

Cæſar, about 1781 Years; wherefore $\frac{1781}{133\frac{1}{3}} = 13\frac{143}{400}$ Days.

Hence it is manifeſt, that ſince the Correction of the Calendar by *Julius Cæſar*, the Equinoxes and Solſtices have anticipated above 13 Days; ſince therefore this Regreſſion of the Equinoxes *&c.* from the time of *Julius Cæſar*'s Correcting the Calendar to this time is above 13 Days, and ſince the Vernal Equinox is now upon the 9th of *March*, it is evident that it was then about the 22d of *March*.

By the like Method of Computation, the Vernal Equinox will be found on the 22d Day of *March*, at the time of our Bleſſed *Saviour*'s Birth, Paſſion, and Reſurrection.

For tho' the Regreſſion of the Equinox, from *Cæſar*'s time to the Paſſion of our Bleſſed *Saviour*, muſt be about 14 Hours; yet becauſe the Sun enter'd the Sign *Aries*, about *Ante Chriſtum* 45 Years, *March* 22d, 8h with us, *i. e.* at *Jeruſalem* 22d. 11h. it will therefore follow, that the Vernal Equinox at the Paſſion of our Lord had not (in the correſponding Years, after the Biſſextile) altered its Day.

This Form of the *Julian* Year was univerſally preſerved without any Alteration, that ever I heard of, till the Year 1582, when Pope *Gregory* XIII. made the following Alterations, and was thence called the *Gregorian* Year.

Firſt, Becauſe he found the Equinoxes, *&c.* had gone back about 10 Days, as was then computed, from the time of the Council of *Nice* to the Year 1582, that he might therefore bring the Equinoxes and Solſtices again to their former Place, he cauſed 10 Days to be taken away in the Month of *October* in 1582, and commanded them to call the 5th Day, the 15th, and ſo not only omitted all the intermediate Days, but alſo all the Characteriſtical Letters, that were fixed to thoſe Days; and A, which is the Characteriſtick for the 15th of *October*, and that Year was *Monday*, ſucceeded inſtead of E, the Characteriſtick of the 5th, which that Year was *Friday*, and therefore conſequently C muſt ſucceed and become the Dominical Letter, inſtead of G, which was the Dominical Letter before.

Hence we may obſerve, that the Pope's Rectification of the Calendar, in 1582, is not without its Errors: for with reſpect to the Regreſſion of the Equinoxes it would (in my humble Opinion) have been better if they had,) when they were about to correct, gone back as far as the Birth, or Paſſion of our Bleſſed Lord, and inſtead of 10, to have taken 12 Days from their Calendar which now, inſtead of 11, would have been, as it truly is, 13 Days; which Days the Equinoxes have gone back ſince that Time.

Likewiſe with reſpect to the ancient Cycle of Dominical Letters, which was altered by the Pope, without any Occaſion, for if inſtead of A, the Characteriſtick of the 15th of *October*, had been put E, the Characteriſtick of the 5th, then G, which was the Dominical Letter in 1582, would not have been altered, as it was, to the Letter C, which ſucceeded in the Place of G, as a Dominical Letter, that Year wherefore they were forced to alter the Cycle of Dominical Letters, as the two following Tables ſhew: That, on the Left Hand, is the ancient *Julian* Cycle of Dominical Letters, which we now have, and from which Pope *Gregory* chang'd, that on the Right is the *Gregorian* firſt Alteration of the Cycle of Dominical Letters, which ſerved only to the Year 1700.

Cycle of the ⊙.		Cycle of the ⊙.			Cycle of the ⊙.		Cycle of the ⊙.	
1	G F	15	C		1	C B	15	F
2	E	16	B		2	A	16	E
3	D	17	A G		3	G	17	D C
4	C	18	F		4	F	18	B
5	B A	19	E		5	E D	19	A
6	G	20	D		6	C	20	G
7	F	21	C B		7	B	21	F E
8	E	22	A		8	A	22	D
9	D C	23	G		9	G F	23	C
10	B	24	F		10	E	24	B
11	A	25	E D		11	D	25	A G
12	G	26	C		12	C	26	F
13	F E	27	B		13	B A	27	E
14	D	28	A		14	G	28	D

So great was the Regard that our prudent Anceſtors had for this Cycle of Letters, that, rather than they would have them altered, they cauſed the Intercalary Day, on Biſſextile Years in *February*, to have the ſame Characteriſtick Letter F, as the Day precedent, that the Order of the Weekly Character ſhould not be diſturbed, but the ſame Characteriſtick Letters are conſtantly fixed to the ſame Days of each Month throughout the Year; hence it is, that in every Biſſextile Year we have two Dominical Letters, the one before, the other after the Leap Day, which is always fixed upon the 6th of the Calends of *March* in the *Roman* Account, which making two Sextiles, or *Dies Biſſextiles*, gave the Name of Biſſextile to our Leap Year.

Now for the time to come if no other Proviſion had been made by the Pope, but only the taking away theſe 10 Days, they would ſtill have been liable to the ſame Error as before, for the Equinoxes, *&c.* would in the like Number of Years remove to the ſame Time they were at, before this Rectification. Therefore the Pope, to avoid this, commanded, that every Hundredth Year, (which is always Biſſextile) for 300 Years together, the Intercalary Day ſhould be omitted, but the fourth Hundreth Year ſhould continue Biſſextile; wherefore Omitting 3 Days in 400 Years, after they had taken away 10 Days, keeps the Equinoxes, *&c.* to the Time they were at, about the Council of *Nice.*

For Inſtance, in the Years 1700, 1800, 1900, which are all Biſſextile Years, the Intercalary Day was ordered to be omitted; but in the Year 2000, which will be alſo Biſſextile, the Intercalary or Leap Day is ordered to be taken in, as with us.

Hence, whenever they omit a Day, they make an Alteration in the Dominical Letters, wherefore the Table above, for the *Gregorian* Account, ſerved no longer than the Year 1700; and as but one Day was then omitted, ſo but one Letter was altered, and as that Table to 1700 began with C, ſo from 1700 to 1800, it will and does begin with D, and from 1800 to 1900 with E, and from 1900 to 2100 with F, for the Year 2000 will be Biſſextile; but then from 2100 to 2200 the Cycle of Dominical Letters will begin again with G, as they did at the firſt, and as ours do to this Day.

The next thing to be provided for, was the true Time of the Celebration of *Eaſter*; for they were far from thinking (as ſome among us do) that the Correction of the Calendar only would be effectual for that Purpoſe; therefore inſtead of the *Dionyſian* Cycle, which by Proceſs of Time was indeed become very erroneous, as we find it at this Day, the *Pope* and his Adviſers introduced another Cycle, not only erroneous, but alſo very intricate; and this was one Reaſon why the *Pope*'s Scheme was rejected, in this and ſome other Nations.

This will be more manifeſt by comparing their ſuppoſed Full Moons (found only by the help of a new Diſpoſition of the ancient Cycle of Epacts) which they make uſe of for their Paſchal Terms at this time, with the true Full Moons, which ſhould be their Paſchal Terms. I ſay, it will be manifeſt, that they who have this correct Calendar, as they call it; that they who have caſt out the *Dionyſian* Cycle, as erroneous for the Purpoſes of finding *Eaſter*, do notwithſtanding often celebrate this great Feſtival, contrary to the Ratifications of the Council of *Nice*.

Golden Number.	Gregorian Epact.	Their Eaſter Limits by theſe Epacts.		The true Eaſter Limits by the Moon.	
1	0	April	13	April	13
2	11	April	2*	April	3
3	22	March	22	March	22
4	3	April	10	April	10
5	14	March	30*	March	31
6	25	April	18	April	18
7	6	April	7*	April	6
8	17	March	27*	March	26
9	28	April	15	April	15
10	9	April	4	April	4
11	20	March	24	March	24
12	1	April	12	April	12
13	12	April	1	April	1
14	23	March	21	March	21
15	4	April	9*	April	8
16	15	March	29*	March	28
17	16	April	17*	April	16
18	7	April	6	April	6
19	8	March	26*	March	25

Hence it appears, there are 8 Years in the Cycle of 19, in which they may obſerve *Eaſter* Day, contrary to the *Nicene* Canon. Twice they may obſerve it a Week too ſoon, and ſix times a Week too late; and this will always happen, when there is a Full Moon, in the one Caſe, on a *Sunday*, and in the other on a *Saturday*; for then *Eaſter* Day is obſerved by them, either on the Full-Moon Day, which is a Week too ſoon, or elſe a Week too late, and in both Caſes, contrary to the Ratifications of the *Nicene* Fathers.

I hope that if ever our Governors ſhould think it expedient to correct our Calendar, theſe things (which muſt, I think, be deem'd Faults in the *Gregorian* Correction) will be carefully conſider'd.

For with regard to the *Vernal* Equinox, would it not have been much better, becauſe more agreeable to Truth, to have had it fixed, as it really happen'd, about the time of our Saviour's Paſſion? So that by ſuch future Corrections as they have provided for, with regard to the Regreſſion of the Equinoxes, *&c.* and by ſuch Emendations and Corrections of the *Dionyſian* Cycle, with regard to the anticipating Full Moons, as may be ſeen herein, they as we, by this means, might always obſerve this great Feſtival agreeable to the Reſurrection of our Lord, which was the *Sunday* after the firſt Full Moon, next after the *Vernal* Equinox, which was the Reaſon, no doubt, of its being ſo ſettled by the *Nicene* Fathers.

I might now proceed to exhibit Tables for finding *Eaſter* agreeable to ſuch Correction of the Calendar, *viz.* By either taking away 15 Days at once from the Year, as Pope *Gregory* did in 1582 his 10; or omitting the Leap-Day for 13 Leap-Years ſucceſſively, which would effect the ſame thing in 52 Years; and if this Correction were to take its Beginning, in the Year 1740, and continue to omit the Leap-Day every Biſſextile after, till 1788 incluſive, we ſhould then have the Vernal Equinox, *&c.* as they were about the time of our Saviour's Paſſion.

But in regard of the Uncertainty of the thing, whether ever it may be thought expedient or not by our Governors, and if it ſhould, it will be ſoon enough when it is determined by thoſe in Authority, in what manner this Correction ſhall be made; for theſe Reaſons I have here omitted ſuch Tables at preſent. I ſhall therefore proceed to what I chiefly intended, which is to ſhew the Reaſon of the frequent Contradictions that we find between the Perpetual Table, and the Rubrick in the Book of *Common-Prayer*, with regard to *Eaſter*.

SECT. II.

The Anniverſary Commemoration of our Saviour's Reſurrection from the Dead, commonly called Eaſter-Day, *proved to be very often celebrated contrary to the Rule in our Book of* Common-Prayer.

IT will be manifeſt to any who look but into the *Annual Almanacks*, or any *Ephemeris*, for the Time paſt, and compare the Time therein fix'd, for the Obſervation of *Eaſter-Day*, with the Rule in our Book of *Common-Prayer*, for determining the ſame, they will find that we here in *England*, *&c.* keep this great Feſtival very often contrary to the ſaid Rule. Which Rule, doubtleſs, is what we ought to be governed by, in determining *Eaſter*; becauſe it is the Standard by which the Church deſign'd we ſhould be govern'd.

The RULE is,

Viz. That " *Eaſter-Day* ſhould always be the
" firſt *Sunday* after the firſt Full Moon, which
" happens next after the one and twentieth Day
" of *March*. And if the Full Moon happens
" upon a *Sunday*, *Eaſter-Day* is the *Sunday* after.

Now, I preſume, our *Almanack* Writers are govern'd by that Table in our Book of *Common-Prayer*, for finding *Eaſter*, becauſe by the Title of it, it is ſuppoſed perpetual; but that Table is now, and hath been for a long time, erroneous, as I ſhall prove hereafter.

In order therefore to bring this Affair into an Examination, and to make it appear that the Rule and Table do frequently contradict each other, I will exhibit all the Full Moons that have already happen'd in one *Lunar* Cycle, which by the Rule ſhould have been the *Eaſter* Full Moon, or Limit, *viz.* From the Year 1718, to the Year 1736 incluſive, being juſt 19 Years. In which I will ſet down the Day of the Month, and the Day of the Week on which the *Eaſter* Full Moon happen'd; and alſo the Month, and Day of the Month in each Year, that *Eaſter-Day* ſhould have been obſerved according to the Rule and the Deſign of the Church. And likewiſe the Month, and Day of the Month that it was obſerved by us here in *England*, &c. by the Direction of the aforeſaid Table.

N. B. *In the following Table, on thoſe Years which are marked with ſingle* Aſteriſms, *we have obſerved* Eaſter, *and all the reſt of the Moveable Feaſts, a Week later than is given by the Rule: And thoſe Years which are marked with double* Aſteriſms, Eaſter, *and all the reſt of the Moveable Feaſts have been obſerved three Weeks or a Month ſooner than is given by the ſaid Rule.*

Year of our Lord.	Dominical Letter.	Gold Number-	Full-Moons, or true Eaſter Limit.	Eaſter Day.	
				By Rule	By Table.
*1718	E	9	April 4 Friday.	April 6	April 13
19	D	10	March 24 Tueſday.	March 29	March 29
20	C B	11	April 11 Monday.	April 17	April 17
*21	A	12	April 1 Saturday.	April 2	April 9
22	G	13	March 21 Wedneſday	March 25	March 25
23	F	14	April 9 Tueſday.	April 14	April 14
*24	E D	15	March 28 Saturday.	March 29	April 5
**25	C	16	April 16 Friday.	April 18	March 28
26	B	17	April 5 Tueſday.	April 10	April 10
27	A	18	March 26 Sunday.	April 2	April 2
*28	G F	19	April 13 Saturday.	April 14	Apri 21
29	E	1	April 1 Tueſday.	April 6	April 6
30	D	2	March 23 Monday.	March 29	March 29
31	C	3	April 11 Sunday.	April 18	April 18
*32	B A	4	March 30 Thurſday.	April 2	April 9
**33	G	5	April 18 Wedneſday.	April 22	March 25
34	F	6	April 7 Sunday.	April 14	April 14
*35	E	7	March 27 Thurſday.	March 30	April 6
*36	D C	8	April 14 Wedneſday.	April 18	April 25

This Table I have formed out of the *Ephemerides*, for the reſpective Years ſet down, wherein I preſume the Full Moons, I have thence took, have been put down with great Care; and ſince we ſee, that *Eaſter-Day* has not always been obſerved on the firſt *Sunday* after the firſt Full Moon, after the 21ſt Day of *March*, as the Rule provides (which we cannot but look upon as invariable) we may, I think, ſafely conclude that *that* perpetual Table is now become erroneous, whatſoever it might have been heretofore.

From this Table it appears that *Eaſter-Day* has been kept by us 9 Years out of 19 erroneouſly, *i. e.* contrary to the Rule and the Deſign of the Church.

'Tis alſo obſervable, that ſeven of the nine Years, *viz.* 1718, 1721, 1724, 1728, 1732, 1735, and the laſt Year 1736, we have obſerved *Eaſter-Day* one Week too late, according to the Rule. And the other two Years, *viz.* 1725, and 1733, the firſt was obſerved three Weeks, and the latter four Weeks too ſoon by the ſaid Rule.

And if we examine the Cycle before this, *viz.* from the Year 1699 to the Year 1717 incluſive, we ſhall find that in that Space of Time alſo, *Eaſter* was obſerved by us, 9 times contrary to the Rule, *viz.* in 1701, 1705, 1707, 1708, 1709, 1711, 1712, one Week too late, and 1706 and 1714, both one Month too ſoon.

In like manner if we examine a Cycle forward, *viz.* from the Year 1737 to the Year 1755 incluſive, we ſhall find that in this Space of Time, we ſhall obſerve *Eaſter-Day* 11 times contrary to the Rule, nine of which, *viz.* 1738, 1739, 1741, 1742, 1745, 1748, 1751, 1755, we ſhall obſerve *Eaſter-Day* a Week later than the Rule gives it; and in the other 2 Years, *viz.* 1744. 1752, we ſhall obſerve it, the firſt 4 Weeks, and the latter 3 Weeks ſooner than is given by the Rule.

Hence it appears, that beſides our obſerving of *Eaſter-Day*, frequently a Week too late, in each Cycle of 19 Years we obſerve it, on 2 of the Years 3 or 4 Weeks too ſoon; and this always happens when the Golden Number is 5 or 16, let the Dominical Letter be what it will. The Reaſon hereof ſhall be given farther on.

Now our erroneous obſerving of *Eaſter*, *i. e.* contrary to our own Rule, is not at all occaſion'd by any Defect that may be charg'd on the *Julian* Computation of Time, but purely by the Defect of the Perpetual Table for finding *Eaſter* in our Book of *Common-Prayer*. For how different ſoever we may obſerve *Eaſter* from thoſe who follow the *Gregorian* Computation, yet that can no way affect, or hinder us from keeping to our own Rule. Again, tho' it be allowed, that thro' the Defect of the

Julian Computation, the Time of the Equinox has crept back to forwarder Days of the Month, and on that Account may occaſion us oftentimes to obſerve this Feſtival, different from thoſe who have kept the Equinoxes to the Time they were at, at the firſt Inſtitution of this Rule. Yet ſince the Rule directs us to the Time which the *Julian* Year hath meaſured out for us, and ſince it intends no more (to us) than that we ſhould obſerve our *Eaſter* the firſt *Sunday*, after the firſt Full Moon, after the 21th Day of *March* thus meaſured out; it therefore follows, that our obſerving of *Eaſter*, contrary to the Rule, is not occaſioned by the Difference between the *Engliſh* and Foreign Account.

SECT. III.

Of the Antiquity of Eaſter, *with a ſhort Account of the Time when, the Manner how, and by whom it was at the firſt fixed, and publiſhed throughout the Chriſtian Church; with the Origin, Nature, and Conſtruction of the Table for finding* Eaſter *for ever, with particular Inſtances of its pointing out* Eaſter *erroneouſly, and the Reaſon thereof fully explain'd.*

THO' we have no Account, I think, in Scripture of the Anniverſary Commemoration of our Lord's Reſurrection from the Dead; yet it is evident to thoſe who are converſant in the Affairs of the Primitive Church, that it was obſerved very early, even in the *Apoſtles* Days.

Amongſt the many Teſtimonies that might be brought for the Antiquity of this Feaſt, let the 2 following ſuffice.

" I. St. *Auguſt*. Epiſt. 118. Thoſe things which " are not written, but we keep them by Tradition, if they be obſerved all the World over, " are to be underſtood to be commended to us, " and commanded either by general Councils (whoſe " Authority in the Church is moſt ſafe) or elſe " by the *Apoſtles*:

" As for Example, That the Paſſion of our
" Lord, his Reſurrection and Aſcenſion into
" Heaven, and the Coming of the Holy Ghoſt,
" ſhould be obſerved by an Anniverſary Solem-
" nity.

" II. *Conſtantine the Great*, c. 17. The Feaſt
" of *Eaſter* we have kept from the firſt Day of
" the Paſſion until now. *Euſeb. de Vita Conſtant.*
" l. 3. c. 17.

Moreover it is well known, what great Diſputes there were after the *Apoſtles* Times, about the particular time when this Feſtival was to be obſerved. For the *Eaſtern* Aſſemblies contended, that the Feaſt of the Reſurrection ſhould be celebrated, preciſely on the 14th Moon of the firſt Month of the *Hebrews*, * which People were therefore called *Quartadecimans*. The *Weſtern* People, on the contrary, contended for a different Cuſtom of St. *Peter*, of fixing this Chriſtian Paſſover to *Sunday*; and others contended, that not ſo much the Revolution of the Moon, as the Sun's, ought to be conſidered in determining the Feaſt of the Reſurrection. At laſt it was agreed, at the Great Council of *Nice*, about the Year of our Lord 325, 1. That this Feaſt of the Reſurrection ſhould be celebrated upon *Sunday*. 2. That it ſhould not at any time be celebrated on the ſame Day with the *Jews*; nor yet, *3dly*, too far from their Paſſover. Agreeable to this it was ſettled, that this Feaſt ſhould be celebrated, the firſt *Sunday* after the firſt Full Moon, next after the Vernal Equinox; and, to keep the Time of the Celebration different from the Time of the *Jewiſh* Paſſover, it was ordered that, if the Full Moon ſhould happen upon a *Sunday*, then the Feaſt to be celebrated the *Sunday* following.

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* It is very probable, that the *Hebrews* obſerved the Lunar Year, for all Nations made Uſe of this Year before the Length of the Tropical Year was known; this Year conſiſted of 12 Lunations, or Synodick Months, which are finiſhed in 354 Days, at the End of which, their Year began again; and it ſeems neceſſary, for this Reaſon, that they ſhould begin their Civil Day with their Year and Month, that is, with the New Moon; and upon this Account, the firſt, ſecond, third, &c. Day of the Month, was called the firſt, ſecond, and third Moon, and the Day of the Full Moon was hence called the 14th Moon.

Which is the ſame in effect, as the Rule which we have now in our Book of *Common-Prayer*; only with this Difference, our Rule gives it, the firſt *Sunday* after the firſt Full Moon, next after the 21ſt Day of *March*; and this at the Council of *Nice*, the firſt *Sunday*, after the firſt Full Moon, next after the Vernal Equinox, which at that Time was about the 21ſt of *March*. Here, I dare ſay, it will be granted, that by the Full Moon here mentioned, is meant the Time when that great Luminary is in Oppoſition to the Sun, and not any fictitious Time (which muſt perpetually be departing farther and farther from the true Time) ſuppoſed by their erroneous Cyclian Tables, which falſly ſuppoſes the Full Moons perpetually to return the ſame. It does not, I think, appear that they made Uſe of any ſuch Tables immediately after the Council of *Nice*, for the ſuppoſed Equinoctical Full Moons, in thoſe Cyclian Tables, anſwer not to the Equinoctical Full Moons of that Time; which doubtleſs they did, to the Time, when they were firſt calculated.

Beſides, it is known, that immediately after this great *Council*, they had other Methods for determining *Eaſter*; for the Affair, to wit, the Calculation of the Vernal Equinox, and the Full Moon next following, for every Year, was left to the Biſhop of *Alexandria*, which when he had determined, and thereby the Time of *Eaſter*, he acquainted the Biſhops of the Churches of it; which they, every Year, uſed to proclaim at the Feaſt of the

Epiphany, to give Notice thereof to the People, that they might cauſe the reſt of the Moveable Feaſts, depending upon *Eaſter*, to be placed in their Order throughout the Year. But when the *Church* enlarged herſelf, this Method of publiſhing the Time of *Eaſter* became too troubleſome, the Art of Printing being not then found out.

About 200 Years after the Council of *Nice*, one *Dionyſius* (a certain learned Abbot, and as ſome think a *Scythian*) according to *Scaliger*, began to compoſe Paſchal Tables, agreeable to the Ratifications of the Council of *Nice*. But it is not certain what ſort of Tables they were; tho' it is *Scaliger*'s Opinion, that *Dionyſius* was the firſt Author of what they call the Great Paſchal Cycle, conſiſting of 532 Years = 19 + 28, *i. e.* the Cycle of the Sun multiplied into the Cycle of the Moon, after which Period, it is certain, the Golden Number and Dominical Letter will return again the ſame as they were 532 Years before.

And ſo on in each ſingle Year of this new Period, as they did in each ſingle Year of the Period before; and ſo on perpetually, from Period to Period for ever.

But this is ſometimes called the *Victorian* Period, from *Victor*, who is ſaid to be the firſt Inventer of it; but be this as it will, who ever was the firſt Inventer of it, or how correct ſoever it might be at the firſt, by Length of Time it is become very erroneous for the Purpoſe of determining of *Eaſter*.

But that perpetual Table in the Book of *Common-Prayer* is an Abridgment of that great Cycle, wherefore if the Original is become erroneous, the Abridgment muſt needs be ſo.

How theſe Tables by Length of Time have become thus erroneous, ſeems not to be commonly known, otherwiſe they might, from time to time, have been eaſily corrected, and not to have ſuffer'd the Error to have grown ſo large, as we now find it. Nay it ſeems to me, as tho' the Authors, *&c.* of thoſe Tables were not apprehenſive themſelves of their growing defective by Length of Time, otherwiſe they never would have eſtabliſhed a Perpetual Table for finding *Eaſter*, without giving Notice to the World of ſuch Defect.

It ſeems to have been the Opinion of theſe Authors, *&c.* that after they had calculated all the Poſt-Equinoctial Full Moons for 19 Years, and finding that after that Time the correſponding Full Moons, in each ſingle Year of the Period, return on the ſame Day, and nearly on the ſame Hour: I ſay, it ſeems as though from hence they concluded, that when once thoſe Full Moons were rightly determined, and fixed to their Days through one ſingle Series of 19 Years, the ſame might always be determined.

For Inſtance, ſuppoſing in the firſt Year of this Period they had, by Aſtronomical Calculation, found the Poſt-Equinoctial Full Moon, on the 5th Day of *April*; now becauſe the Phaſes of the Moon, after 19 Years, return the ſame, they concluded that the ſame Full Moon would perpetually return on the ſame 5th Day of *April* at the End of every Period of 19 Years for ever.

But we, that live at this Diſtance of Time, know, that the Poſt-Equinoctial Full Moon in this Age, and in the firſt Year of the Lunar Cycle, falls on the firſt or the ſecond Day of *April*, three or four Days ſooner than they are ſuppoſed to do by this perpetual Table.

This will appear more evident by the following Table, which is a Table of the Poſt-Equinoctial Full Moons, through one Series of 19 Years about the Time of *Dionyſius*; and which are the ſuppoſed *Eaſter* Full Moons, or Limits, in the perpetual Table compared with the *Eaſter* Full

Moons in another Column oppoſite thereto through a Series of 19 Years in this Age.

Golden Number.	Full Moons, or Eaſter Limits by the perpetual Table.	Characteriſtick Letter.	The Full Moons in this Age which ſhould be the Eaſter Limits.	Characteriſtick Letter.
1	April 5	D	April 2	A
2	March 25	G	March 23	E
3	April 13	E	April 11	C
4	April 2	A	March 30	E
5	March 22	D	April 18	C
6	April 10	B	April 7	F
7	March 30	E	March 27	B
8	April 18	C	April 14	F
9	April 7	F	April 4	C
10	March 27	B	March 24	F
11	April 15	G	April 12	D
12	April 4	C	March 31	F
13	March 24	F	March 21	C
14	April 12	D	April 9	A
15	April 1	G	March 28	C
16	March 21	C	April 16	A
17	April 9	A	April 5	D
18	March 29	D	March 26	A
19	April 17	B	April 13	E

From this Table it is evident, that the Equinoctial Full Moons, *i. e.* the *Eaſter* Full Moons in the Time of *Dionyſius*, were three or four Days after the correſponding Full Moons of the Lunar Cycle in this Age, and therefore conſequently, whenever the *Eaſter* Full Moon in this Age happens on either *Thurſday*, *Friday*, or *Saturday*, nay ſometimes on *Wedneſday*, we ſhall obſerve *Eaſter* Day a Week later than we ſhould, by the Deſign of the Church, as expreſſed in the Rubrick; and the Reaſon thereof is, becauſe the perpetual Table is founded on the *Dionyſian* Full Moons; or in other words, as the *Eaſter* Full Moons happened, in, or about, the time of *Dionyſius*, which ſuppoſes them not to happen, till three or four Days after they really do at this time. And therefore, whenever the *Eaſter* Full Moon happens towards the latter End of the Week, the *Sunday* which the Church deſign'd for *Eaſter* Day is over, by our being govern'd (I know not for what Reaſon) by this perpetual Table, which ſuppoſes the Full Moons to happen now, as they did 1100 or 1200 Years ago.

But this is not all neither; for ſometimes the Error is greater, and we obſerve *Eaſter* Day three, or four Weeks ſooner than it ought to be, by the Deſign of the Church. And this always happens, whenever the Full Moon in *March* happens within three or four Days, next before the 21ſt Day; for then the *Dionyſian* Full Moons, which were the *Eaſter* Limits in his Time (as may be ſeen in the Table above, and by which our perpetual Table was made) is ſuppoſed not to happen till after the 21ſt Day of *March*; hence it is that the *Sunday* next following comes to be obſerv'd by us for *Eaſter* Day, whereas according to the Deſign of the Church, this is not the Full Moon, which is intended for the Paſchal Term, or *Eaſter* Limit, becauſe, the Truth is, the real Full Moon happens now BEFORE the 21ſt Day of *March*, and on that Account cannot be made Uſe of for the Paſchal Term, therefore the next Full Moon, and not this, is deſigned by the Church to be the Paſchal Term: and if the Full Moon happens not, till towards the latter End of the Week, and on that Account puts off the Obſervation of *Eaſter* a Week longer than it ought (as was but juſt now obſerved) we always in this Caſe keep the Feſtival four full Weeks before the Church intended it ſhould be kept; but if the *Eaſter* Full Moon happens towards the latter End of the Week, and under the ſame Circumſtances as above, in this Caſe we obſerve *Eaſter* Day, not four, but three Weeks ſooner than was intended by the Church. If we give a particular Inſtance, this will appear more evident.

In the Year 1733, the *Eaſter* Full Moon, or that Full Moon which happened next after the 21ſt Day of *March*, was on *Wedneſday* the 18th Day of *April*; therefore the *Sunday* next following was the *Sunday* deſigned by the Church, to have been *Eaſter* Day; but *Eaſter* Day, we all know, was kept, that Year, as it is found in the Table, on the 25th Day of *March*, four Weeks ſooner than is directed by the Rubrick: but the Deſign of the Church, with regard to *Eaſter*, is expreſs'd in this Rubrick; wherefore, ſince we contradict the Rubrick in keeping *Eaſter*, we contradict the Deſign of the church.

After all this, can any one imagine this Contradiction to be occaſioned by the Difference between the *Engliſh* and foreign Account. What other 21ſt Day of *March*, I pray, is intended in the Rubrick, but that which the *Julian* Year hath meaſured out? Nay, it is evident, no other 21ſt of *March* can be intended in the Rubrick, to us, who have kept to the *Julian* Year, becauſe when it was found that the Vernal Equinox had altered its Day, then the Clauſe *Vernal Equinox*, in the *Nicene* Canon, was left out, by us, and inſtead thereof, the 21ſt of *March* was put in its Room.

The Reaſon therefore why *Eaſter* Day was kept by us who ſtill retain the *Julian* Year, on the 25th of *March* 1733 rather than on the 22d of *April*, as the Church deſigned it ſhould have been kept, is truly this, becauſe the Full Moon in *March* 1733 happened, ſo near the 21ſt Day, *viz.* on the 19th Day, that the perpetual Table, which ſuppoſes each correſponding Full Moon, in the Lunar Cycle, to happen as they did in the Time of *Dionyſius*,

nyſius, which now falls about four Days ſooner, maketh that ſame Full Moon to happen after the 21ſt Day of *March*, *viz.* on the 22d Day, which does really, in this Age, happen on the 19th Day; wherefore becauſe the Full Moon is falſely ſuppoſed to happen after the 21ſt of *March*, *viz.* on *Thurſday* the 22d, and therefore falſely becomes the Paſchal Term; it therefore follows, ſince we are governed by theſe falſe Principles, that *Eaſter* Day 1733 was kept by us on the 25th of *March*, inſtead of the 22d of *April*, as the Church deſigned it ſhould be: And the ſame thing, *viz.* of keeping *Eaſter*, three or four Weeks ſooner than is deſigned by the Church, will happen, whenever the Golden Number is 5, or 16, as will appear by looking back to the Years 1714, 1725, as well as the Year 1733, and by looking forwards to the Years 1744, 1752, 1763, *&c.*

I conceive it will be needleſs to give any other Inſtance as we might for the Year 25, for tho' in that Year we obſerved *Eaſter* not a Month, but three Weeks too ſoon, yet the Circumſtances of the thing, in this Year 25, differ not at all from that of 33, ſaving only in the Year 25, all thoſe Circumſtances, which attend the Year 33, happen in conjunction with the other Error of keeping *Eaſter* a Week too late, as in the Years 18, 21, *&c.* as is mentioned above, which is the true Reaſon of making the Difference three Weeks, inſtead of a Month or four Weeks.

Now that the Full Moon is ſuppoſed, in the perpetual Table, to happen on the 22d Day of *March*, when the Golden Number is 5, is evident from the Table itſelf. For it is obſervable, that the Numbers againſt each Golden Number, throughout the whole Table, are in *Arithmetick* Progreſſion, having their common Difference an Unit, beginning with the leaſt under one or other of the Characteriſtick Letters, and ſo proceeding through all the ſeven. Now, 23 is the loweſt or leaſt Number, in the Line againſt the Golden Number 5, and its Characteriſtick Letter E. Wherefore, ſince the Number 22 is the next below 23, with the ſame Difference of an Unit as thoſe above 23, in that Line, exceed each other, and its Characteriſtick D, and the next Letter in order below E, it is therefore evident, beyond Contradiction, that the 22d Day of *March*, in the 5th Number of the Lunar Cycle, is always aſſigned, in this Table, to be the Full Moon for that Month.

But perhaps it may be here objected, by the Cyclian Computatiſts, that they are not inſenſible of the Difference that there is between the Time of the *Eccleſiaſtical* Full Moons, ſuppoſed in their Tables, and the true Time of the Full Moons in the Heavens, as they are ſet down in the Table above; but (ſay they) it does not appear from hence, that ever the Time of our *Eccleſiaſtical* Full Moons were co-incident with the Oppoſition of the Luminaries, much leſs that there hath been ſuch an Anticipation, ſince the time of *Dionyſius*, &c. Or that there will be ſuch an Anticipation for the like time to come. To this it may be anſwer'd.

Firſt, It can hardly be thought but that by the Full Moon, mentioned in the Rule, is meant the Time of the Oppoſition of the Luminaries; and granting this, it is ſtill more difficult to conceive, how any one could pretend to frame Tables, which, at the very firſt, contradicted their own Rule, as we now find they frequently do, ſince it cannot but be allowed, that there was nothing could hinder but that it was as eaſy to adapt their Tables to the Rule, as otherwiſe. The Abſurdity of this Practice ſufficiently confutes itſelf, for this would be as ridiculous, as if after an Act of Parliament had paſſed into a Law, for the taking a certain Rate of Intereſt on Money *per Cent per Annum* and yet notwithſtanding the very Perſons employ'd by the Government, to calculate Tables of Intereſt for that Purpoſe, ſhould manifeſtly in thoſe Tables contradict ſuch Act of Parliament.

Secondly, Any one may eaſily ſatisfy himſelf, that there will be either an Anticipation, or a Retardation of the New Full Moons; ſince upon Trial it cannot be found, that any Number of Lunations will exactly meaſure any Number of *Julian* or Tropical Years, an Inſtance in the *Julian* Years will be ſufficient. Thus if we put a = the Seconds in one Lunation, and b = the Seconds in 19 *Julian* Years, then $\frac{b}{a}$ $\frac{2b}{a}$ 5 $\frac{3b}{a}$ &c. will be, when reduced, mixed Numbers, let the Remainder or Numerator of the fractional part be expreſs'd by n, $2n$, $3n$, &c. which will expreſs the Anticipation in b, $2b$, $3b$, &c. Years, and therefore conſequently, $28n$, will expreſs this Anticipation, in $28b$, or 532 Years; but n will be found = 5295 Seconds = $\overset{b}{:}\ 1 : \overset{\prime}{28}, \overset{\prime\prime}{15}$, therefore $28n = 28 \times 5295 = \overset{\prime\prime}{148260}$ Seconds = 2471 Minutes = $\overset{d}{1} : \overset{b}{17} : \overset{\prime\prime}{11}$, in 532 Years.

Again *Thirdly*, that there is ſuch Anticipation will be manifeſt to all thoſe who are converſant in the Aſtronomical Tables, by calculating the equal Time of the true Oppoſitions and Conjunctions of thoſe and theſe times, *i. e.* about the Time of the the *Nicene* Council, the Time of *Dionyſius*, and the preſent Time; but this I judge to be needleſs on this Occaſion for me, becauſe it is but to prove what is manifeſt enough without ſuch Calculation: however inſtead thereof (becauſe they are eaſier come at, I will exhibit half a dozen mean Oppoſitions, in *January* at the Interval of 266 Years from each other, with the mean Motion of the Moon from the Sun for each of thoſe Years; by which may be ſeen a viſible and gradual Increaſe of the mean Motion throughout the whole Time, and conſequently the mean Oppoſition will perpetually fall on forwarder Days of the Month, as appears from the following Calculation.

Gold. Num.	Years An. Ch.	Mean Mo. of ☽ from ☉				Mean Oppoſit. in Jan.			
		S.	°	′	″		d.	h.	′
1	323	2	18	21	58	Jan.	8	8	5
1	589	3	5	50	59	Jan.	6	21	40
1	855	3	9	8	12	Jan.	6	13	11
1	1121	3	25	36	33	Jan.	5	6	40
1	1387	3	29	54	7	Jan.	4	22	11
1	1653	4	16	22	47	Jan.	3	13	52

Whence it appears that the mean Oppoſitions, in the Interval of 1330 *Julian* Years, anticipate from *Jan.* the eighth, to almoſt *Jan.* third; but the equal Time of the true Oppoſitions muſt nearly keep Pace with the mean Oppoſitions, and cannot precede, nor follow after the Time thereof, above 14 Hours; wherefore an Anticipation may hence be concluded as well as tho' we had calculated the equal Time of the true Oppoſitions.

In the Year of our Lord 325, the Year wherein the Council of *Nice* ſat, the Golden Number being 3, the Full Moon, in *April* that Year, will be found on the 15th Day; but our perpetual Table ſuppoſes it on the 13th Day of *April*, when the Golden Number is 3; wherefore ſince we have proved an Anticipation, we may ſafely conclude that this Table, as it now ſtands, was not in being at the Time of the Council of *Nice*.

In like manner in the Year of our Lord 308, being juſt 19 Years before *Dionyſius* is ſaid to have publiſh'd the Paſchal Cycle, the equal Time of the true Oppoſition is found on the firſt Day of *April*, and probably he fixed the Paſchal Term, when the Prime was 15 as, the Full Moon happened in *April* that Year; wherefore ſince in our perpetual Table we find the Paſchal Term on the firſt Day of *April*, when the Prime is 15, we may hence conclude that this Table has its Origin from about that Time, that it was either then about firſt calculated, or then about newly corrected, and that it has not been altered, ſince about that Time.

SECT IV.

The Perpetual Table *in our Book of* Common-Prayer *newly corrected*; *and made to anſwer the* Paſchal *Full Moons in the preſent Age, whereby* Eaſter Day *may be found truly according to the Deſign of the Church as expreſs'd in her* Rubrick, *with regard thereto. With a new and correct* Table *of all the Moveable Feaſts, obſerved in the Church of* England *for* 64 *Years. Alſo the firſt Column in each Month of the* Calendar *in the Book of* Common-Prayer *newly corrected.*

HAving in the foregoing Sections ſufficiently ſhew'd and proved that we often obſerve *Eaſter* erroneouſly, that is, contrary to the Rule and the Deſign of the Church, and alſo aſſign'd, and demonſtratively ſhew'd, the true Cauſe of ſuch Error, I will therefore, in this Section, exhibit a Method, whereby this Error, for the preſent, may intirely be taken away; ſo that we may once more conſtantly obſerve our *Eaſter* according to the Inſtitution of the Church: Which hath not been conſtantly done, by us here in *England*, &c. not ſince the firſt Uſe of this Cycle among us; for this Error was very ſmall at the firſt, and hardly

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to be diſcerned for a long time, becauſe ſo ſeldom repeated, but it is of ſuch a growing Nature, that it has now enlarged itſelf, and is become very conſpicuous, by its frequent Repetitions, and, if not corrected and amended, will become more and more viſible; inſomuch that I may venture to ſay, that before this Error become as large again, by conſtantly departing, farther from the Truth, *Eaſter Day*, and all the Moveable Feaſts depending thereupon, will not ſo much as once be obſerved according to the Church's Inſtitution.

This Error might, nay, it may from time to time be very eaſily corrected; for tho' it be of a growing Nature, yet it is very ſlow in its Progreſs, inſomuch that it has been above 1100 Years in growing to the Size we now find it. So that we need not lay aſide our Perpetual Table, but only renew it, and that need not be above once in an Age; and by that means the Table may be kept, ſo as always to anſwer the Rule.

The following Table is of the ſame Nature with our old Perpetual Table, and is only the ſame renew'd, being calculated from our preſent Full Moons, and therefore will point out *Eaſter* without any Error at preſent; I therefore humbly propoſe it may be made Uſe of, inſtead of that which we now have in our Book of *Common-Prayer*.

A TABLE *ſhewing the* Paſchal Full Moon *for theſe* 28 *Years laſt paſt, by which this new corrected Table may be tried and examined, whether it doth not truly point out* Eaſter-Day, &c. *according to the Inſtitution and Deſign of the* Church, *as expreſs'd in the* Rubrick, *relating thereto.*

An. Dom.	D.L.	G.N	Paſchal Full Moon.	
1710	A	1	Sunday April	2.
1711	G	2	Friday March	23*.
1712	F E	3	Friday April	11*.
1713	D	4	Monday March	30
1714	C	5	Sunday April	18*.
1715	B	6	Thurſday April	7*.
1716	A G	7	Tueſday March	27
1717	F	8	Sunday April	14
1718	E	9	Friday April	4*.
1719	D	10	Tueſday March	24
1720	C B	11	Monday April	11
1721	A	12	Saturday April	1*.
1722	G	13	Wedneſday March	21
1723	F	14	Tueſday April	9
0000				
1724	E D	15	Saturday March	28*.
1725	C	16	Friday April	16*.
1726	B	17	Tueſday April	5
1727	A	18	Sunday March	26
1728	G F	19	Saturday April	13*.
1729	E	1	Tueſday April	1
1730	D	2	Monday March	23
1731	C	3	Sunday April	11.
1732	B A	4	Thurſday March	30*.
1733	G	5	Wedneſday April	18
1734	F	6	Sunday April	7
1735	E	7	Thurſday March	27*
1736	D C	8	Wedneſday April	14*
1737	B	9	Monday April	4
1738	A	10	Friday March	24*.

The

The Perpetual TABLE *for finding* Eaſter *in our Book of* Common-Prayer, *newly corrected, whereby it is made to anſwer the Deſign of the* Church *as expreſs'd in her* Rubrick, *relating thereto.*

Golden Numb.	A	B	C	D	E	F	G
I.	Apr. 9	3	4	5	6	7	8
II.	Mar. 26	27	28	29	23	24	25
III.	Apr. 16	17	18	12	13	14	15
IV.	Apr. 2	3	4	5	6	Mar. 31	Apr. 1
V.	Apr. 23	24	25	19	20	21	22
VI.	Apr. 9	10	11	12	13	14	8
VII.	Apr. 2	3	Mar. 28	29	30	31	Apr. 1
VIII.	Apr. 16	17	18	19	20	21	15
IX.	Apr. 9	10	11	5	6	7	8
X.	Mar. 26	27	28	29	30	31	25
XI.	Apr. 16	17	18	19	13	14	15
XII.	Apr. 2	3	4	5	6	7	1
XIII.	Mar. 26	27	28	22	23	24	25
XIV.	Apr. 16	10	11	12	13	14	15
XV.	Apr. 2	3	4	Mar. 29	30	31	Apr. 1
XVI.	Apr. 23	17	18	19	20	21	22
XVII.	Apr. 9	10	11	12	6	7	8
XVIII.	Apr. 2	Mar. 27	28	29	30	31	Apr. 1
XIX.	Apr. 16	17	18	19	20	14	15

If we examine this Table by the Table of Full Moons which are the *Eaſter* Limit at this Time, (ſee Sect. *the* firſt) we ſhall find that in all thoſe Years wherein we obſerved *Eaſter* erroneouſly, will by this Table be found agreeable to the Rule in our Book of *Common-Prayer*.

I will juſt give an Inſtance in each of the two Caſes; *viz.* one out of thoſe Years, wherein we obſerve *Eaſter* a Week too late, and the other out of thoſe Years, wherein we keep our *Eaſter* three or four Weeks too ſoon,

Among thoſe Years wherein we obſerve *Eaſter* one Week too late, the laſt Year 1736 is one: for it was found upon the 25th of *April*, by the perpetual Table, and upon that Day it was obſerved by us here in *England*: but the firſt *Sunday*, after the firſt Full Moon after the 21ſt Day of *March*, was *April* 18. wherefore by the Rule and this new correct Table, ſhould have been *Eaſter* Day.

Again, in the Year 1733, the perpetual Table for finding *Eaſter* points it out on the 25th Day of *March*, and it was accordingly celebrated on that Day; but the firſt *Sunday* after the firſt Full Moon, next after the 21ſt Day of *March*, was *April* the 22d, for the firſt Full Moon next after the 21ſt Day of *March* was on *Wedneſday April* 18, wherefore the 22d Day was the true *Eaſter Sunday* by the Rule, and the ſame 22d Day will be found to be *Eaſter* Day by the Table above, for againſt the Golden Number 5, and under the Dominical Letter G, we find the 22d Day of *April*, which was deſign'd by the Church to have been *Eaſter* Day.

In this new corrected Table, there is one thing in which I have not deviated from the old Table, and that is, with regard to the Full Moon when it falls on the 21ſt day of *March*; but I make that the *Eaſter* Limit, or Paſchal Term, in this Table, as well as it is in that, tho' againſt a different Golden Number, which I muſt confeſs ſeems to me to be contrary to the Meaning of the Rule, in our Book of *Common-Prayer*, for there it is expreſly ſaid, the firſt Full Moon AFTER, and not UPON the 21ſt Day of *March*; but this would have made as great an Alteration, when the Golden Number became 13, as when it becomes either 5 or 16, for inſtead of the Numbers which ſtand againſt 13, in this new corrected Table, we ſhould have had *April*

A	B	C	D	E	F	G
23	24	25	26	27	21	22

Now if this be an Error, in the old Table, it has been ſuch from the very firſt, for then, tho' the Eaſter Full Moon, or Paſchal Term, when the Golden Number was 13, was on *March* the 24th, (ſince which Time it has anticipated to *March* the 21ſt) yet there was, then, one of the *Eaſter* Limits on the 21ſt of *March*, when the Golden Number was 16, (which is now anticipated below the 21ſt, and therefore cannot be made uſe of, in this Number of the Cycle, for the *Eaſter* Limit;) but as the Full Moons have anticipated from that Time to this, from the 24th of *March* to the 21ſt, which is 3 Days nearer the Beginning of the Month, ſo likewiſe we ſee, that the 21ſt Day becomes the *Eaſter* Limit, when the Golden Number is 13, which is three Numbers nearer the Beginning of the Cycle.

From this Table I have calculated the following Table of all the Moveable Feaſts, obſerved in the Church of *England*, throughout the Year, for 64 Years to come, *viz.* from 1737, to 1800 incluſive: and excepting the Years 1760, and 1798, I dare venture to ſay that this Table will not once all that Time deviate from the Deſign of the Church as expreſs'd in her Rubricks, with regard to *Eaſter* and the Moveable Feaſts depending thereupon.

For tho' the correſponding Paſchal Full Moons, in their Return, are liable to alter the Day of the

Month, in future Cycles, yet this Alteration of a Day can only affect the Falling of *Eaſter*, and conſequently the Falling of the Moveable Feaſts, when the Golden Number is 13, and when ſuch correſponding Full Moon ſuppoſitionally returns on the ſame Day of the Month, and when ſuch Day happens upon a *Saturday* or *Sunday*; for then, in ſome one, or more of theſe Circumſtances conjunctly, it may affect the Falling of *Eaſter* Day, and conſequently the Falling of all the other Moveable Feaſts throughout the Year: Thus, when the Golden Number is 13, becauſe the Paſchal Full Moon being then fixed, on the 21ſt of *March*, in this Table, it is manifeſt that in the future Cycles whenever this N°. returns, if the correſponding Full Moon in *March* return, but one Day ſooner than the 21ſt (the fixed Day by the Cyclian Method) we ſhall, in this Caſe, obſerve our *Eaſter* Day, and the reſt of the Moveable Feaſts a Month ſooner, than by the Rubricks they were intended.

This will be more evident by particular Inſtances: Thus, the Paſchal Full Moon, in this Table, is fixed to the 21ſt Day of *March*, when the Golden Number is 13, and in the Year 1722, it was Full Moon on the 21ſt Day accordingly about Eight of the Clock at Night; now in its Return the next Cycle in the Year 1741, it will be Full Moon on the 21ſt about Five o' Clock in the Morning; likewiſe in the next Return but one, *viz.* in the Year 1779, (the Golden Number being in all theſe Years 13) it will be Full Moon on the 21ſt Day about Two in the Morning, and ſo altereth not the Day in any of theſe Years, and therefore will make no Alteration in our Table; but in the Years 1760 and 1798, the Golden Number being in both theſe Years 13, the equal Time of the true Oppoſition of the Luminaries will be in 1760 *March* $20^{d};\ 1^{h}\ 16'$, and in

1798

A TABLE of the MOVEABLE FEASTS, calculated from 1737 to the Year 1800 incluſive, being Sixty-four Years, in which *Eaſter-Day* (on which the reſt depend) is determin'd by the preſent *Paſchal Full Moons*, anſwering exactly to the Rule in the Book of COMMON-PRAYER.

The Year of our LORD.	The Golden Number.	The Epact.	Dominical Letter.	Sundays after Epiphany.	Septuageſima Sunday.		Firſt Day of Lent.		Eaſter-Day.		Rogation Sunday.		Aſcenſion Day.		Whit-Sunday.		Sundays after Trinity.	Advent Sunday.	
1737	9	9	B	4	February	6	February	23	April	10	May	15	May	19	May	29	24	November	27
* 1738	10	20	A	2	January	22		8	March	26	April	30		4		14	27	December	3
* 1739	11	1	G	5	February	11		28	April	15	May	20		24	June	3	24		2
1740	12	12	F E	3		3		20		6		11		15	May	25	25	November	30
* 1741	13	23	D	1	January	18		4	March	22	April	26	April	30		10	27		29
* 1742	14	4	C	4	February	7		24	April	11	May	16	May	20		30	24		28
1743	15	15	B	3	January	30		16		3		8		12		22	25		27
** 1744	16	26	A G	6	February	19	March	7		22		27		31	June	10	23	December	2
* 1745	17	7	F	3		3	February	20		7		12		16	May	26	25		1
1746	18	18	E	2	January	26		12	March	30		4		8		18	26	November	30
1747	19	29	D	5	February	15	March	4	April	19		24		28	June	7	23		29
* 1748	1	11	C B	3	January	31	February	17		3		8		12	May	22	25		27
1749	2	22	A	2		22		8	March	26	April	30		4		14	27	December	3
1750	3	3	G	5	February	11		28	April	15	May	20		24	June	3	24		
* 1751	4	14	F	2	January	27		13	March	31		5		9	May	19	26		
** 1752	5	25	E D	5	February	16	March	4	April	19		24		28	June	7	23	Novembe	
1753	6	6	C	4		7	February	24		11		16		20	May	30	24		
1754	7	17	B	3	January	30		16		3		8		12		22	25		
* 1755	8	28	A	5	February	12	March	1		16		21		25	June	4	24	D	
* 1756	9	9	G F	4		4	February	21		7		12		16	May	26	25		
1757	10	20	E	2	January	26		12	March	30		4		8		18			
1758	11	1	D	5	February	15	March	4	April	19		24		28	June	7			
* 1759	12	12	C	3	January	31	February	17		4		9		13	May	23			
** 1760	13	23	B A	6	February	20	March	8		23		28	June	1	June	11			
1761	14	4	G	5		11	February	28		15		20	May	24		3			
* 1762	15	15	F	2	January	27		13	March	31		5		9	May	19			
** 1763	16	26	E	5	February	16	March	5	April	20		25		29	June				
1764	17	7	D C	4		8	February	25		11		16		20	May				
* 1765	18	18	B	2	January	23		9	March	27		1		5					
* 1766	19	29	A	5	February	12	March	1	April	16		21		25	June				
1767	1	11	G	4		4	February	21		8		13		17	May				
* 1768	2	22	F E	1	January	20		6	March	23	April	27		1					
* 1769	3	3	D	4	February	8		25	April	12	May	17		21					
1770	4	14	C	3	January	31		17		4		9		13					
** 1771	5	25	B	6	February	20	March	9		24		29	June	2	June				
* 1772	6	6	A G																
1773	7																		
1774	8	28	E	5															
* 1775	9	9	D	3		1	February												
* 1776	10	20	C B	2	January	24		10	March	27		1		5					
1777	11	1	A	5	February	12	March	1	April	16		21		25	June	4	24	December	3
* 1778	12	12	G	3	January	28	February	14		1		6		10		20	26		2
** 1779	13	23	F	1		20		6	March	24	April	28		2	May	12	27		1
* 1780	14	4	E D	4	February	9		26	April	12	May	17		21		31	24	November	29
1781	15	15	C	3	January	31		17		4		9		13		23	25		28
* 1782	16	26	B	5	February	13	March	2		17		22		26	June	5	23		27
* 1783	17	7	A	4		5	February	22		9		14		18	May	28	25	December	3
1784	18	18	G F	3	January	28		14	March	31		5		9		19	26		1
1785	19	29	E	5	February	16	March	5	April	20		25		29	June	8	23	November	30
* 1786	1	11	D	3		1	February	18		5		10		14	May	24	25		29
1787	2	22	C	2	January	24		10	March	28		2		6		16	26		28
1788	3	3	B A	5	February	13	March	1	April	16		21		25	June	4	24	December	3
* 1789	4	14	G	3	January	28	February	14		1		6		10	May	20	26		2
* 1790	5	25	F	5	February	17	March	6		21		26		30	June	9	23		1
1791	6	6	E	4		9	February	26		13		18		22		1	24	November	30
* 1792	7	17	D C	2	January	25		11	March	28		2		6	May	16	26		28
* 1793	8	28	B	5	February	13	March	2	April	17		22		26	June	5	23		27
1794	9	9	A	4		5	February	22		9		14		18	May	28	25	December	3
* 1795	10	20	G	2	January	21		7	March	25	April	29		3		13	27		2
* 1796	11	1	F E	4	February	10		27	April	13	May	18		22	June	1	24	November	30
1797	12	12	D	3		1		18		5		10		14	May	24	25		29
* 1798	13	23	C	6		21	March	10		25		30	June	3	June	13	22		28
* 1799	14	4	B	4		6	February	23		10		15	May	19	May	29	24		27
* 1800	15	15	A G	3	January	29		15		1		6		10		20	26	December	2

N. B. On thoſe Years which are mark'd with Aſteriſms, the Perpetual Table in the Book of *Common Prayer* contradict the *Rubrick*, but are here made to agree. The Error is commonly a Week; but on thoſe Years which are marked with double Aſteriſms, it is three or four Weeks.

[Place this *Table* after Page 66.]

1798 *March* 20^{d}, 10^{h}, 30$'$, 43$''$, whence it is evident, theſe Full Moons being BEFORE the 21ſt Day, that neither of them can be made Uſe of for the Paſchal Full Moon, without contradicting the Rubrick, which ſays it muſt be the next Full Moon AFTER the 21ſt Day; wherefore, in both theſe Years, we muſt have recourſe to the next Full Moon in *April*, for the Paſchal Full Moon, and therefore conſequently, *Eaſter* Day, and all the Moveable Feaſts (if we conform to the Inſtitution of the Church) muſt be kept a Month later than is given by this Table for thoſe Years; but this I have corrected in the Table of Moveable Feaſts.

Likewiſe when the Paſchal Full Moon (according to the Cyclian Method) is ſuppoſed to return in future Cycles on the ſame Day of the Month, that they are fixed in the Table, and whenever thoſe Days happen upon a *Saturday* or *Sunday*, it may affect the Falling of *Eaſter* Day, and all the reſt of the Moveable Feaſts, and cauſe them to be obſerved a Week ſooner or later, than by the Rubricks they ſhould be.

Thus, in the Year 1712, the Paſchal Full Moon was *April* 10, and the Golden Number 3. Now the correſponding Full Moon in its Return the next Cycle in the Year 1731, the Golden Number, being then alſo 3, is ſuppoſed to return, on the ſame 10th Day of *April*, which that Year was on *Saturday*; but the Paſchal Full Moon, that Year, did not return on the 10th, but upon *Sunday* the 11th of *April*, wherefore, by the Rubricks, if the 10th were the Paſchal Term, then the 11th would have been *Eaſter* Day; but becauſe the Moon being not really in the full till the 11th, and this Day being *Sunday*, the ſame Rubrick (*i. e.* the Rule for finding *Eaſter*) makes *Eaſter* Day that Year rightly to fall on the 18th of *April*, a Week later than it would have done, if the correſponding Full Moon had return'd but one Day ſooner, as it is ſuppoſed to do, by the Cyclian Method. But if this 10th of *April* had happened on any Day of the Week but *Saturday*, it will be manifeſt to any one who conſiders it, it could have had no Effect, under this Circumſtance, upon the Falling of *Eaſter* Day.

Again in the Year 1711, the Golden Number being 2, the Paſchal Full Moon, that Year, was on the 23d Day of *March*; now the correſponding Full Moon is ſuppoſed to return on the ſame 23d of *March*, whenever the Golden Number is 2, which was and will be in the Years 1730, 1749, 1768, 1787; but in Regard that in the Year 1730, the ſaid 23d Day of *March* happens upon *Monday*, and in 1749 on *Thurſday*, and in 1787 on *Tueſday*, the Alteration of a Day cannot make any Alteration in the Falling of *Eaſter* Day. But in the Year 1768, the Golden Number being then alſo 2, the 23d of *March* happening then upon *Sunday*, it will make an Alteration; for the equal Time of the true Oppoſition of the Luminaries in *March* 1768 is 21^{d} 19^{h}: $57^{\prime}$, that is, about Eight o' Clock on *Saturday* the 22d Day in the Morning: Wherefore the 23d (which will be *Sunday*) according to the Rubrick and this correct Table will be *Eaſter* Day, and not the 30th as it would have been, if we had ſuppoſed the correſponding Full Moon to have return'd on the 23d Day this Year, being the ſame Day of the Month that it did really happen in the Years 1711 and 1730, *&c.*

Hence appears the great Uncertainty of theſe Perpetual Cyclian Tables, for the Purpoſes of finding *Eaſter* agreeable to any ſettled *Rule* or Canon whatſoever, which cannot be depended upon for any conſiderable Time together, without frequent Corrections.

For thoſe Paſchal Terms, which are fixed on a Biſſextile Year, will, in their Return in future Cycles on a common Year, be retarded; and on the contrary, thoſe Paſchal Terms which are fixed on a common Year, will, in their Return in future Cycles on a Biſſextile Year, have an Anticipation: Therefore it is, whenever this Retardation or Anticipation amounts to a Day, and the Paſchal Full-Moon in the firſt Caſe happens upon a *Saturday*, *Eaſter* Day, *&c.* thoſe Years will be a Week later; and in the other Caſe, when in its Return it happens upon a *Sunday*, *Eaſter* Day, *&c.* thoſe Years will be a Week ſooner than by the Rubrick they ſhould be.

And here it may be farther noted, that thoſe Days of the Month, on which the Paſchal Terms are fixed on a Biſſextile Year, will, for three ſucceeding Cycles together, return on common Years, and at the End of the fourth Cycle or 76 *Julian* Years will again return on a Biſſextile Year; ſo that whatever Deviations this Cyclian Method of Computation produces from the real New and Full-Moons, over and above the common Anticipation of $\overset{h}{1} : \overset{\prime}{28} . \overset{\prime\prime}{15}$, in 19 *Julian* Years, will after this Interval (we may reaſonably expect) be repeated, nearly as before.

The following is a Correction of the firſt Column of the Calendar, *in each Month throughout the Year, in the Book of* Common-Prayer; *in which are ſuppoſed to be ſet down the Times of the New Moons, known by the* Golden Number, *for any Year propoſed, being ſet againſt the Day of the Month.*

FOR Inſtance, this Year 1737, the *Golden Number* is 9, (for $\frac{1737 + 1}{19} = 91\frac{1}{9}$, the Numerator of the Fractional Part of the Quotient, if there be any, always ſhews the *Golden Number*; if none, the Diviſor itſelf will be the *Golden Number*); wherefore 9 being ſet againſt *January* 25, we are to underſtand, that whenever the *Golden Number* is 9, the New Moon in *January* will be upon the 25th Day; ſo in like manner you will find 9 ſtand againſt *February* 23, againſt *March* 25, and againſt *April* 23, in the firſt Column of the Calendar in the Book of *Common-Prayer*; by which we are to underſtand that this Year 1737 the *Golden Number* being 9, the New Moon in *February* will be upon the 23d Day, and in *March* upon the 25th, and in *April* upon the 23d, but the New Moon for *January* 1737 is upon the 19th Day, and in *February* upon the 18th Day; likewiſe in *March* we find the New Moon upon the 20th, and in *April* upon the 19th Day. See the Annual *Almanacks*.

Hence therefore it is evident that this Column can be of no uſe, as it is, for the Purpoſes it was intended for, *viz.* for finding the New Moons in each Month throughout the Year, for it is plain it gives them five or ſix Days before they really happen: For this Reaſon I have taken the Liberty to correct it.

In the following Columns I have placed the *Golden Numbers* on each ſide againſt ſuch Days of the Months as I find the New and Full Moons to happen, throughout the laſt Lunar Cycle, and will ſerve to find the New and full Moons, tolerably correct in ſome future Cycles; thus, 1737 is the 9th Year of the preſent Cycle, ſuppoſing we would find the New and Full Moons for *March* and *April*, we ſhall find that the *Golden Number* 9 on the left Hand ſide under ● ☽ ſtands againſt 20, the very Day of the Month on which the New Moon happens; ſo on the right Hand ſide under ○ ☾ the Number 9 ſtands againſt 5, the very Day of the Month on which the Full Moon happens; * the like may be ſeen for *April*, for on the right Hand ſide ſtands 9 againſt 4, the Day of the Full Moon, and on the left Hand ſide ſtands 9 againſt 19, the Day of the New Moon.

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* See the Annual *Almanacks*.

January.				February.				March.			
●☽		○☽		●☽		○☽		●☽		○☽.	
8	1		A		1	12	d		1		d
	2	12	b	16	2	1	e	8	2	12	e
16	3		c	5	3		f	16	3		f
	4	1	d	13	4	9	g	5	4	1	g
5	5	9	e		5	17	A		5	9	A
13	6		f	2	6		b	13	6		b
2	7	17	g		7	6	c		7	17	c
	8	6	A	10	8		d	2	8		d
10	9		b		9	14	e		9	6	e
	10	14	c	18	10		f	10	10	14	f
18	11		d		11	3	g	18	11	3	g
	12	3	e	7	12	11	A	7	12		A
7	13		f	4	13		b		13	11	b
	14	11	g		14	8		15	14	19	c
4	15	19	A	12	15		d	4	15		d
12	16	8	b		16	16	e	12	16	8	e
	17	16	c	1	17		f		17	16	f
1	18		d	9	18	5	g		18		g
9	19	5	e		19		A	1	19	5	A
	20		f	17	20	13	b	9	20		b
	21	13	g		21	2	c		21 *	13	c
17	22		A	6	22		d	17	22 †		d
	23	2	b	14	23	10	e	6	23	2	e
6	24	10	c		24	18	f	14	24	10	f
14	25		d	3	25		g		25	18	g
3	26	18	e		26	7	A	3	26	7	A
	27	7	f	11	27	15	b	11	27		b
11	28		g	19	28		c		28	15	c
	29	15	A		29	4		19	29		d
19	30	4	b						30	4	e
8	31		c					8	31		f

* *Nicene* Equinox.
† Earlieſt *Eaſter* poſſible.

April.				May.				June.			
● ☽		☉ ☽		● ☽		☉ ☽		● ☽		☉ ☽	
	1	12	g	16	1		b	5	1	9	e
16	2	1	A	5	2	1	c	13	2		f
5	3		b		3	9	d		3	17	g
13	4	9	c	13	4		e		4		A
	5	17	d		5	17	f	2	5		b
2	6		e	2	6		g	10	6	6	c
	7	6	f		7	6	A		7	14	d
10	8		g	10	8		b	7	8	3	e
	9	14	A	18	9	3	c		9	11	f
18	10	3	b	7	10		d	15	10	19	g
7	11	11	c	15	11	11	e	4	11		A
15	12		d		12	19	f		12	8	b
4	13	19	e	4	13		g	12	13		c
	14	8	f		14	8	A		14	16	d
12	15		g	12	15		b	1	15		e
	16	16	A		16	16	c		16	5	f
1	17		b	1	17		d	9	17		g
	18	5	c		18	5	e	17	18	13	A
9	19		d	9	19	13	f		19	2	b
	20	13	e	17	20		g	6	20	10	c
17	21	2	f	6	21	2	A	14	21		d
6	22		g		22	10	b	3	22	18	e
14	23	10	A	14	23	18	c		23	7	f
3	24	18	b	3	24		d	11	24		g
	25	7	c		25	7	e		25	15	A
11	26		d	11	26	15	f	19	26	4	b
	27	15	e	19	27		g	8	27		c
19	28		f		28	4	A	16	28	12	d
	29	4	g	8	29		b		29	1	e
8	30	12	A	16	30	12	c	5	30		f
					31	1	d				

July.				August.				September.			
●☽		○☽		●☽		○☽		●☽		○☽	
	1	9	g	13	1	17	c	2	1		f
13	2		A		2		d		2	6	g
	3	17	b	2	3	6	e	10	3	14	A
2	4		c	10	4		f	7	4	3	b
	5	6	d		5	3	g		5	11	c
10	6		e	7	6		A	15	6		d
7	7	3	f	15	7	11	b		7	19	e
	8	11	g		8	19	c	4	8		f
15	9		A		9		d		9	8	g
	10	19	b	4	10		e	12	10		A
4	11		c	12	11	8	f		11	16	b
	12	8	d		12	16	g	1	12	5	c
12	13		e	1	13		A	9	13		d
	14	16	f		14	5	b	17	14	13	e
1	15		g	9	15	13	c		15	2	f
9	16	5	A	16	16		d	6	16		g
17	17	13	b	6	17	2	e		17	10	A
	18	2	c		18	10	f	14	18		b
6	19		d	14	19		g	3	19	18	c
	20	10	e		20	18	A		20	7	d
14	21	18	f	3	21	7	b	11	21	15	e
3	22		g	11	22		c	19	22		f
	23	7	A		25	15	d	8	23	4	g
11	24	15	b	19	24	4	e		24	12	A
19	25		c	8	25		f	16	25		b
8	26	4	d	16	26	12	g		26	1	c
	27	12	e		27		A	5	27		d
16	28		f	8	28	1	b		28		e
	29	1	g		29	9	c	13	29	9	f
5	30		A	13	30		d		30	17	g
	31	9	b		31	17	e				

October

October.				November.				December.			
● ☽		○ ☽		● ☽		○ ☽		● ☽		○ ☽	
2	1	6	A		1	14	d	18	1		f
10	2		b	18	2		e	7	2	3	g
18	3	3	c	7	3	3	f		3	11	A
17	4		d	15	4	11	g	15	4		b
	5	11	e		5	19	A		5	19	c
15	6		f		6		b	4	6		d
	7	19	g	4	7	8	c		7	8	e
4	8		A	12	8		d	12	8	16	f
	9	8	b	1	9	16	e	1	9		g
12	10	16	c		10	5	f	9	10	5	A
1	11		d	9	11	13	g		11	13	b
9	12	5	e	17	12		A	17	12		c
	13	13	f		13		b		13		d
17	14		g		14	2	c	6	14	2	e
	15	2	A	6	15		d		15	10	f
6	16		b	14	16	10	e	14	16		g
	17	10	c	3	17	18	f	3	17	7	A
14	18		d	11	18	7	g	11	18		b
3	19	7	e		19	15	A	19	19	15	c
11	20		f	19	20		b		20	4	d
19	21	15	g	8	21	4	c	8	21		e
	22	4	A		22	12	d		22	12	f
8	23		b	16	23		e	16	23		g
16	24	12	c		24		f		24	1	A
	25		d		25	1	g	5	25		b
	26	1	e	5	26	9	A		26	9	c
5	27		f	13	27		b	18	27	17	d
13	28	9	g	2	28	17	c		28		e
	29	17	A		29	6	d	2	29	6	f
2	30		b	10	30	14	e		30	14	g
10	31	6	c					18	31	3	A

Notwithſtanding, this firſt Column of the Calendar is by ſome ſaid to be *the proper and only Table for finding out the Paſchal Moon, and for fixing of Eaſter-*Day. But I will make it appear, that this Table is ſo far departed from the Truth, as even to fail ſometimes in the Paſchal Moon, notwithſtanding ſo large a Space of Time, as above 29½ Days, bepent in one Lunation.

Thus in the Year 1733, when the *Golden Number* was 5, in this Table * we find the Number 5, ſtanding againſt the 9th Day of *March*; wherefore the 9th Day of *March*, that Year, is ſuppoſed to be the Day of the New Moon, and therefore the 23d, the Day of the Full Moon; and becauſe this Full Moon, by this Table, is after the 21ſt Day of *March*, it is therefore deemed the ——Paſchal Moon: but we had, that Year, a New Moon in *March*, upon the latter End of the fourth, or the Beginning of the 5th Day, and the Full Moon upon the 19th Day; wherefore, becauſe the Moon was really in the Full before the 21ſt of *March*, it could not, without contradicting the Rubrick, be the Paſchal—— Moon, which ſays it muſt be that Moon, that hath its Full, the next AFTER the 21ſt of *March*: but the next Full Moon after the 21ſt of *March*, that Year, was upon *April* the 18th, —— Whence it is evident, that this Table does not always find the Moon, which truly ſhould be the Paſchal Moon.

Hence we may obſerve, this Table is of an earlier Date than the Perpetual Table. For here we ſee, that, when the *Golden Number* is 5, this Table makes the Full Moon in *March*, upon the 23d Day; but the Perpetual Table ſuppoſes it upon the 22d, for by the Table, the 23d may be *Eaſter* Day. Wherefore ſince we have proved, above, an Anticipation of the New and Full Moons; we may conclude this Table to be of an earlier Date than the Perpetual Table: It ſeems to me, by the Conjunctions and Oppoſitions, to be about the Time of the Council of *Nice*, when it was firſt put in the Calendar, or at leaſt then about corrected, ſince which Time it has had no Emendations.

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* That is, the firſt Column of the Calendar.

Thus I have endeavour'd, as well as I can, not only to point out the true Cauſe of our ſo frequent contradicting our own Rule, for finding *Eaſter*, but alſo have propoſed a Remedy whereby ſuch Contradiction may be avoided for the future; and that too without ſuch a Correction of the Calendar, as is by ſome thought to be the only thing neceſſary, for the Regulation of *Eaſter*: but the true Reaſon why we ſo often contradict our own Rubrick, with regard to *Eaſter*, is, as I have ſhewn above, the Defect of the Perpetual Table, which, by its Nature and Conſtruction, cannot provide for the Anticipating Full Moons, without frequent Correction; and it is but Vanity to think, that a Rectification of *Eaſter* can ever be effected, by only correcting our Calendar; that is, ſo as to make the Time of the Celebration thereof agreeable to our own Rule.

And now, what can reaſonably be——ſaid, why this correct Table ſhould not be made uſe of, inſtead of that which we——now have in our Book of *Common Prayer*, which oftener contradicts the Rubrick, with regard to *Eaſter*, than it agrees with it? I know no ſubſtantial Reaſon why it ſhould be rejected, unleſs People chuſe Error rather than Truth.

It is really a Shame that a People who are famed throughout the World, for a ſolid, ingenious, and active People; a People who are nouriſhed under a ſuitable Liberty, by which means they are advanced to ſuch a Pitch of true and ſolid Learning, that it is a very juſt Obſervation made by ſome, *viz.*

that the People of *England* may juſtly claim a true Title to the Empire of Human Knowledge: I ſay, it is a Shame, after all this, to retain ſuch a bare-faced Error in their Book of *Common-Prayer*, which in all other Reſpects is generally allow'd to be very exact, containing an Extract of the beſt of the Primitive Forms of publick Worſhip: but this is an Error, that is become ſuch by Length of Time; and therefore by Length of Time (if no Care is taken of it) it will become much greater, inſomuch that in leſs Time, than it has been in growing to the Size we now find it, we ſhall totally depart from the Deſign of the Church, and not ſo much as once, at any Time, celebrate this great Feſtival according to her Rubrick, with regard thereto.

But methinks I hear ſome ſay, that the Calendar wants Correction as well as this, and without it, the Correction of the Paſchal Feaſt is but imperfect. This I readily grant, and could wiſh to ſee the Calendar corrected in a right Manner; but there are *ſeveral* Difficulties which attend ſuch Correction, firſt with regard to civil Affairs, ſecondly with regard to the thing itſelf, as to the Manner of its being done; for if great Care is not taken, and a Conformity agreeable thereunto, the Imperfection here complain'd of will ſtill remain; and in what Manner ſoever it is done, it muſt unavoidably make more and greater Alterations, than the Correction of the Paſchal Feaſt here propoſed will, without ſuch Correction of the Calendar, which is the chief, if not the only thing, that ſome object againſt the Correction here propoſed.

For admit this Correction of our Calendar were made after the Manner of the *Gregorian* Correction in 1582, there muſt be a great Number of Alterations made; and after all this, the Correction would be but imperfect, and conſequently the Correction of the Paſchal Feaſt would be, as is ſhewn above, imperfect alſo.

Hence it appears, that the Correction of our Calendar is not ſo practicable, as the Correction here propoſed.

Hence alſo it appears, that after all, ſuch Correction is liable to the ſame Imperfection complained of above, with regard to the Paſchal Solemnity, wherefore the Force of the Objection above is greatly diminiſhed.

What therefore can juſtly be objected againſt ſuch a Rectification as is here propoſed, for the Celebration of the Paſchal Solemnity? For here is nothing novel, but this our Table is of the ſame Nature and Conſtruction, as the Table we now have in the Book of *Common-Prayer*: Nay, it is the very ſame, Figure for Figure, only differently diſpoſed.

The ſame thing might nearly be effected without ſuch a new Diſpoſition of the Table itſelf, by only a new Diſpoſition of the *Golden Numbers*, as will be manifeſt from the following Table, which is really the very ſame Table that we now have in our Book of *Common-Prayer*; which upon Examination will be found, by thus diſpoſing of the *Golden Numbers*, to deviate but twice from the Table above, for finding *Eaſter*, in the Space of 64 Years; and becauſe this Table itſelf deviates from the Rubrick twice in that Space of Time, the following Table muſt therefore deviate from the Rubrick four Times, *viz.* in the Years 1760, 1778, 1782, 1798.

A

	A	B	C	D	E	F	G
17	April 9	10	11	12	6	7	8
18	Mar. *a* 26	27	28	29	30	31	Ap. 1
19	April 16	17	18	19	20	14	15
1	April 9	3	4	5	6	7	8
2	March 26	27	28	29	23	24	25
3	April 16	17	*c* 11	12	13	14	15
4	April 2	3	4	5	6	31	Ap. 1
5	April 23	24	25	19	20	21	22
6	April 9	10	11	12	13	14	8
7	April 2	3	M28	29	30	31	Ap. 1
8	April 16	17	18	19	20	21	*e* 22
9	April 9	10	11	5	6	7	8
10	March 26	27	28	29	30	31	25
11	April 16	17	18	19	13	14	15
12	April 2	3	4	5	6	7	*f* 8
13	March 26	27	28	22	23	24	25
14	April 16	10	11	12	13	14	15
15	April 2	3	4	*d* 5	M30	31	Ap. 1
16	April 23	*b* 24	18	19	20	21	22

But this by the way; for I have inſerted this Table only to ſhew, that what is here called the New Correct Table, is but the Old one newly diſpoſed; and to ſhew that a new *Diſpoſition* of the Golden Numbers nearly affects the ſame thing.

Upon the whole, then, if this New *Diſpoſition* of the Old Perpetual Table ſhould be thought expedient by our Governors to be made uſe of, this Age would have the Honour of celebrating this great Feſtival exactly agreeable to the Ratifications of the *Nicene* Fathers, which is more than has been done, I may venture to ſay, for more than 1000 Years. Indeed, this Cycle has not been univerſally made uſe of by all the Churches of *Britain* and *Ireland* not yet above 937 Years; for it was not univerſally received in theſe Kingdoms till about *Anno* 800. For tho' this Table was framed at firſt to anſwer thoſe Ratifications, yet we now ſee how far ſhort it comes of what it was deſigned for; and ſince it is evident, that this New Correct Table is of the ſame Nature and Conſtruction as the Old one, ſhewing now truly what that did, and was deſigned to ſhew, 1100, or 1200 Years ago. what can reaſonably be alledg'd againſt its being uſed? For, if no farther Care were took of it, it will ſhew all the Varieties of *Eaſter;* for theſe 1200 Years to come, with as little Error as we find in the Old one at this Day.

FINIS.

BRITISH MUSEUM